AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 54 WALL STREET, NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. V., No. 26] SATURDAY, JUNE 30, 1849. [WHOLE No. 688, VOL. XXII.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

PRINCIPAL CONTENTS.

Copper Ores of Lake Superior.....401
Improvement on Diving Bells.....402
Improved Railway Chairs and Switches.....403
New Express Locomotive.....403
Manufacture of Wrought-Iron Railway Wheels403
Explosion of Steam Boilers prevented by electricity.....404
Railroads in Georgia.....404
Norwich and Worcester Railroad.....405
Railway Share List.....406, 407
The Hewson Pier for Bridges.....408
Scioto and Hocking Valley Railroad.....408
Wrought-Iron Wheels for Railways.....408
Panama Railroad.....408
Railroads in Maine.....408
Steele and Middleton's Compound Bridge Rail.409
Wilmington and Manchester Railroad.....409
Louisville and Frankfort Railroad.....409
Lexington and Frankfort Railroad.....409
Iron Manufacture in the West.....410
Cotton Statistics.....410
Expenses of the Government.....410
Public Works of Ohio—Canals.....410
New Haven and New London Railroad.....410

AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 54 WALL STREET, NEW YORK.

Saturday, June 30, 1849.

Copper Ores of Lake Superior.

Lake Superior.—In a report of Henry R. Schoolcraft, Esq., to the War Department, on the Native Copper of Lake Superior, dated November 6, 1820, and published in the third volume of Silliman's Journal, we find the following account of the earliest investigations made in this region.

"The existence of copper in the region of Lake Superior appears to have been known to the earliest travellers and voyageurs. As early as 1689 the Baron La Hontan, in concluding a description of that lake, adds, 'that upon it we also find copper mines, the metal of which is so fine and plentiful, that there is not a seventh part loss from the ore.'* In 1721, Charlevoix passed through the lakes on his way to the Gulf of Mexico, and did not allow the mineralogy of the country to escape his observation. 'Large pieces of copper,' he says, in speaking of Lake Superior, 'are found in some places on its banks and around some of the islands, which are still the objects of a superstitious worship among the Indians. They look upon them with reverence, as if they were the presents of those gods who dwell under the waters; they collect their smallest fragments, which they carefully preserve, without however making any use of them. They say that formerly a huge rock of this metal was to be seen elevated a considerable height above the surface of the water, and as it has now disappeared, they pretend that the gods have carried it elsewhere —but there is great reason to believe that in process of time the waves of the lake have covered it entirely with sand and slime; and it is certain that in several places pretty large quantities of this metal have been discovered without being obliged to dig very deep. During the course of my first voyage to this country, I was acquainted with one of our order (Jesuits) who had been formerly a goldsmith, and who, while he was at the mission of Sault de Ste. Marie, used to search for this metal, and make candlesticks, crosses, and censers of it, for this copper is often to be met with almost entirely pure.'†

In 1766 Capt. Carver procured several pieces of native copper upon the shores of Lake Superior, and about the sources of the Chippeway and St. Croix rivers, and published an account of these discoveries in his book of travels, which has served to give notoriety to the existence of that metal in the region alluded to, without, however, furnishing any very precise information as to its locality, or abundance. He did not, from his own account, traverse the southern shore of the lake, but states that virgin copper is found in great plenty on the Ontonagon, or Copper Mine river, and about other parts of Lake Superior, and adds, 'that he observed many of the small islands, particularly those on the *eastern shores*, were covered with copper ore, which appeared like beds of copperas (sulphate of iron) of which many tons lay in a small space.'‡

Five years after Carver's visit (A.D. 1771) a considerable body of native copper was dug out of the alluvial earth on the banks of the Ontonagon river, by two adventurers of the name of Henry and Bostwick, and together with a lump of silver ore of eight pounds weight of a blue color and semi-transparent, transported to Montreal, and from thence shipped to England, where the latter was deposited in the British Museum after an analysis of a portion of it, by which it was determined to contain 60 per cent. of silver.§ These individuals were connected with a company, which had been formed in England for the purpose of working the copper mines of Lake Superior, among whom where the Duke of Gloucester, Sir William Johnstone, and several other gentlemen of rank. They built a small vessel at Point aux Pins, six miles above the Sault de Ste. Marie, to facilitate their operations upon the lake, and a considerable sum of money was expended, first, in exploring the northern shore of the lake and the island of Maripeaux, and afterwards in the mining speculations which were authorised upon the banks of the Ontonagon. These transactions will be best illustrated by a quotation from the narration account which Henry has himself published. After returning from the Canadian shore of the lake, and passing Point Iroquois, where the silver ore was found, he observes—'Hence we coasted westward, but found nothing till we reached the Ontonagon, where, besides the detached masses of copper formerly mentioned, we saw much of the same metal *imbedded in stone*. Proposing to ourselves to make a trial on the hill, till we were better able to go to work upon the solid rock, we built a house and sent to Sault de Ste. Marie for provisions. At the spot pitched upon for the commencement of our preparations, a green colored water, which tinges iron of a copper color, issued from the hill, and this the miners called a *leader*. In digging they found frequent masses of copper, some of which were of three pounds weight. Having arranged everything for the accommodation of the miners during the winter we returned to the Sault.

Early in the spring of 1772 we sent a boat load of provisions, but it came back on the 20th day of June, bringing with it to our surprise the whole establishment of miners. They reported that in the course of the winter they had penetrated *forty* feet into the face of the hill, but on the arrival of the thaw, the clay on which, on account of its stiffness, they had relied, and neglected to secure it by supporters, had fallen in; that from the detached masses of metal, which to the last had daily presented themselves, they supposed there might be ultimately reached a body of the same, but could form no conjecture of its distance, except that it was probably so far off as not to be pursued without sinking an air shaft;

* La Hontan's Voyages to Canada, p. 214.

† Charlevoix's Journal of a Voyage to North America, vol. ii., p. 45.

‡ Carver's Travels, p. 67.

§ Henry's Travels, p. 30.

and lastly that the work would require the hands of more men than could be fed in the actual situation of the country. Here our operations in this quarter ended. The metal was probably within our reach, but if we had found it, the expense of carrying it to Montreal must have exceeded its marketable value. It was never for the transportation of copper that our company was formed, but always with a view to the silver which it was hoped the ores, whether of copper or lead, might in sufficient quantity contain.'

Eighteen years after the failure of this attempt, (1789) McKenzie passed through Lake Superior on his first voyage of discovery into the northwest, and in his description of Lake Superior says—'On the same side (the south) at the river Tennagon is found a quantity of virgin copper. The Americans, soon after they got possession of that country, sent an agent thither, and I should not be surprised to hear of their employing people to work the mine. Indeed it might be well worthy the attention of the British subjects to work the mines on the north coast, though they are not supposed to be so rich as those on the south.'‖

The attention of the United States Government appears first to have been turned toward the subject during the administration of President Adams, when the sudden augmentation of the navy rendered the employment of domestic copper in the equipment of ships, an object of political as well as pecuniary moment; and a mission was authorised to proceed to Lake Superior. Of the success of this mission, as it has not been communicated to the public, nothing can with certainty be stated, but from the inquiries which have been instituted during the recent expedition, it is rendered probable that the actual state of our Indian relations at that period, arrested the advance of the commissioners into the regions where the most valuable beds of copper were supposed to lie, and that the specimens transmitted to government were procured through the instrumentality of some friendly Indians employed for that purpose."

‖ McKenzie's Voyages, p. 29.

Improvement in Diving Bells.

The principle of the diving-bell is illustrated familiarly by holding the mouth of a glass tumbler evenly on the surface of water, and then immersing it without allowing the air included within it to escape. A paper placed on the inside of the tumbler will be found after the immersion perfectly dry.

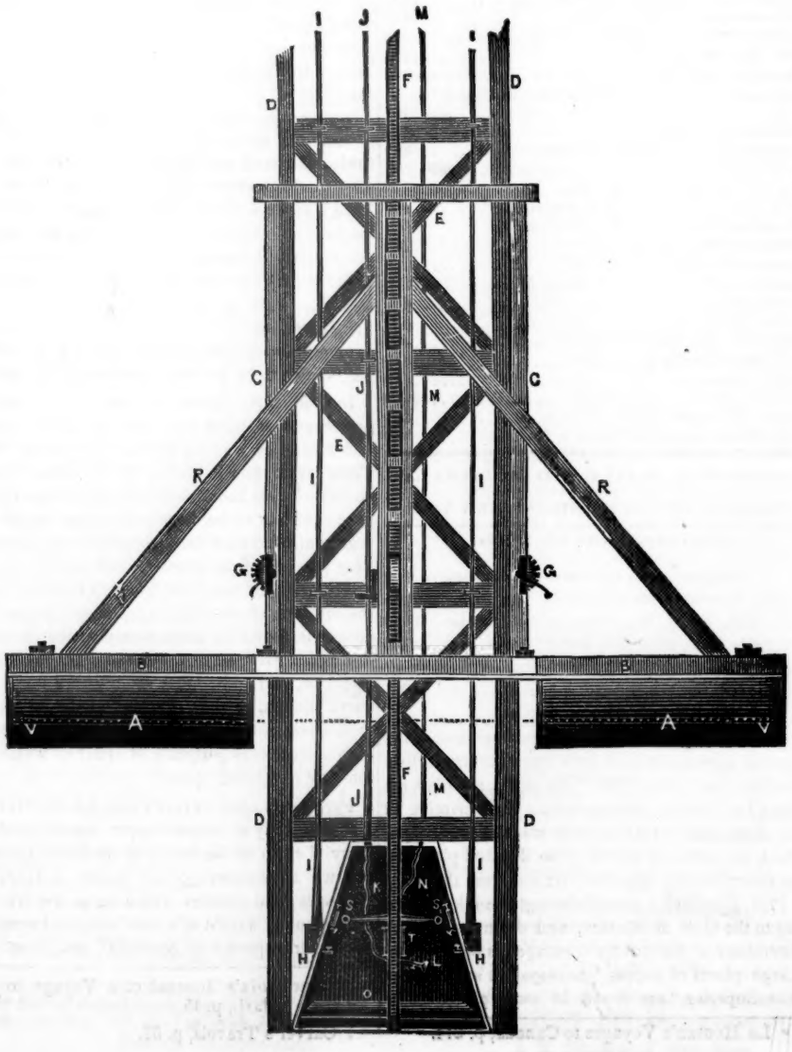
Air, owing to the repulsive property of its molecules, has always a tendency to enlarge its volume. This tendency is called its *tension* or *elasticity*; and differs from the elasticity of solids and fluids, inasmuch as, continuing to act in every degree of density, it appears to have no limit. The Law of Mariotte shows that the tension of air is in the inverse ratio of its volume: it is therefore measured by the force that, increasing the density, compresses the volume. At the level of the sea the compression is such as to give a tension or expansive force of about 14·76 lbs. avordupois to the square inch: this is taken as the standard pressure of what is called *one atmosphere*. If atmospheric air under the piston of a cylinder be taken at a pressure of 15 lbs. on the sq. inch, the density by pushing the piston half-way into the cylinder is doubled; and the pressure of the air is therefore raised by that means to 30 lbs. on the square inch. Again: the higher the temperature of air the greater is its expansive force; and this increase of force, rising in equal proportions along every degree between the freezing and the boiling point, amounts under the latter heat to a force higher than that under the former by about 37 per cent.

Now if a chest of air be lowered with the mouth downward to a depth of 33 feet in water the air within the chest will sustain besides its original one-atmosphere pressure an additional pressure equal to a column of water 33 feet high. But a water-column 33 feet high is, as illustrated by the common sucking-pump, equal to one-atmosphere; and consequently the pressure on the air within the chest being equal at 33 feet deep to *two atmospheres*, the density and tension are double that under ordinary circumstances, or about 30 lbs. to the square inch. But the pressure is still further increased by an increase of temperature as seen above; and therefore the diving bell may be either dangerous or fatal under the pressure resulting from certain depths of immersion coupled with the increase of this pressure occasioned by the lights sometimes used in the bell, insufficiency or irregularity in the supply of air, or any other circumstance leading to an increase of temperature within.

The supply of air must be adapted to the depth of the water and the consumption of the workmen.—The pump must be able to throw in at every stroke the volume consumed by the men during the period of the stroke, and a further supply equal to the production of a volume to fill the bell under the pressure of the head above it. This may of course be done by lessening or decreasing the number of strokes within a given time. When the water rises inconveniently within the bell the men signal for an increased supply; and no other inconvenience than that of tension results from a super-abundant supply, seeing that the excess will pass off under the edges of the bell, and break in bubbles on the surface. Smeaton's bell has undergone such improvements from time to time that it is now quite safe and highly useful in hydraulic works. The bell used by Alexander Nimo at Wellsley Bridge on the Shannon in Ireland, and that used on the other works of that river were very fine examples of the diving bell. The bell at the government dock yard, Plymouth, England, is cast iron, weighing some four tons. It is 6 feet by 4 at the mouth, and 5 feet high. Mr. Frazer has published some ingenious improvements in the diving bell in the Transactions of the Institute of Civil Engineers of Ireland for 1846.

A series of convex lenses on the top admit sufficient light into the bell to enable the men to work in very considerable depths. The air is passed into the bell from a forcing pump through a leather hose; relays of men working the pump in regular strokes during the period of immersion. A pla of leather on the inside is secured over the air hole the spaces between the screws admitting the passage of the air

Fig. 1.



into the bell, but not admitting its return into the hose. This leather covering prevents accident; for even if it burst under the pump the hose will still keep the water from entering the bell. The bell used at Ramsgate Harbor, in England, was slung from a traversing crane, and by that means the men were enabled to place the stones in any required position.

We are led to these general remarks upon the principle of the diving bell and the contrivances, by which it has become one of great practical importance, by an examination of Dr. J. R. Worster's model of an improved bell now exhibiting at the Exchange in this city. The great drawback upon the value of the bell as formerly used has been the difficulty in subjecting it to the control of those using it. As it was carried down and kept in proper position by its own gravity, this was required to be increased in proportion to the size of the bell. From the want o any contrivance to keep the bell stationary, it could not be used in rivers having a strong current, and its une under the most favorable circumstances involved such expense, that it was only resorted to in extreme cases. All these difficulties Dr. Worster professes to obviate. By the machinery he has invented, the bell is perfectly subject to his control. It can be raised or lowered at pleasure to any practicable depth, and used as well in rapid streams as in perfectly quiet water. All his contrivances for maintaining communication between the persons in the bell and those on the outside, as well as for lighting it and supplying it with air, are very ingenious, and appear well adapted to this end, but the great excellence of his contrivance appears to us to be the perfect contral secured by his apparatus over the bell and the trifling force required for working it.

When we consider how very desirable it often becomes to examine the bottom of our rivers and bays, the value of such improvements are at once apparent. But its great value at the present time is in its adaptedness to gold digging in California.—The richest deposits of gold must from the force of natural laws be in the bottom of her rivers. These have not, from the want of suitable apparatus, yet been touched. We understand that Dr. Worster proposes to make this the first field for illustrating the value of his new invention. We have seen letters from California saying that a good diving bell would reveal riches far greater than she has yet yielded.

Dr. Worster brings to this city the highest testimonials from the leading citizens of Baltimore, as to his character both as a skilful professional man and a gentleman, and we hope that he will reap all the reward that his very ingenious invention entitles him to receive.

Fig. 2.

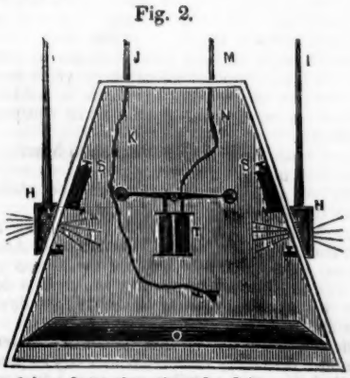
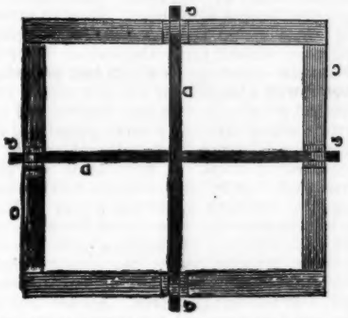


Fig. 1 is a front elevation, fig. 2 is a vertical section of the bell showing its interior, and fig. 3 is a top view, looking down upon the frame and scaffold The same letters indicate like parts. AA, are the floats. BB, transverse beams of the scaffold, and DD, are uprights of the moveable frame made secure by diagonal braces EE. The uprights DD, move in guide grooves formed by two or four upright posts connected by ties. On the edges of DD, are racks indicated in front by F. G, are pinions on the scaffold, which are operated by cranks, and by biting into the racks elevate and lower the bell and moveable platform. RR, are two diagonal

Fig. 3.



braces of the scaffold. II, are tubes to carry off the smoke from the lamps HH. These lamps have oil reservoirs SS, which regulate the supply by two cocks, and the air to the lamp can be regulated by another cock below. J, is the speaking tubes with a mouth piece L. M, is the air tube, and T, the air pump. These tubes are made of metal above the bell, but connected with flexible tubes KN, inside. O, is the bell platform. VV, the water line. This apparatus is all made in sections, and can be taken to pieces and packed in a very small compass.

Improved Railway Chairs and Switches.

It will be remembered that this subject was introduced at the last meeting, and excited considerable interest. Mr. Baines, the inventor, was present on this evening, and gave a further explanation of his invention. The peculiarity of the chairs consists in an arrangement whereby the joints are prevented from rising or getting out of line, and the rails from driving forward. To effect these objects the outer jaw of the chair fits close up to the under side of the head of the rails, but the inner jaw is only of sufficient height to clip the bottom flanch, and the rail is not fixed by a key, but by a square wrought-iron dowel pin, which passed through a hole in the outer jaw of the chair, and a corresponding notch in the end of each rail. This pin has a large flat head and under the head is placed a wrought-iron plate, 9 in. long, which fits close up to the head of the rail, on the inner side, and rests on the chair. A square cotter is then driven vertically through the outer end of the dowel pin, which draws the whole firmly up to the outer jaw of the chair. The wrought-iron plate is ¼ inch thick in the middle, tapered to the ends, and slightly cambered, and is sprung flat by driving the cotter, which is made long enough to drive through the bottom of the chair into the sleeper, and serve as the spike on the outer side of the chair. A slot is made in the upper part of the cotter to allow the cotter being drawn out when required. The pressure of the wheels has no tendency to loosen the fixing of the rails in the chair, as the outer jaw fits close to the head of the rails, while the bottom flanch is firmly clipped by the inner jaw.—The dowel pin does not receive any of the pressure of the wheels, but holds the rails against the outer jaw. It also prevents the rails from rising at the joint, and from driving forwards. The effect of the long plate under the head of the dowel pin is to connect the two rails stifly together, so as to prevent the working of the joint. This improvement was shown by two models of five lengths of rail, one set connected in the ordinary mode, the other by the method under notice. Another part of the invention relates to an intermediote chair, the jaws of which are alike, but set obliquely instead of opposite each other. It is slipped endways on the rail, and then twisted at right angles to the rail, which makes it grip it firmly between the jaws. It is held by means of spikes. The last part of the invention is an improvement in switches which consists principally in making the tongue about half an inch deeper than the rail, so that it may work under it. The object sought is to secure steadiness, and a provision is made for causing the switch to clean itself.

In the course of the discussion, in which the President, Mr. Woodhouse, Mr. M'Connell, and Mr. Slate took part, it was stated that an experiment had been tried with the chairs on the Norfolk line for nearly a year, and the result was quite satisfactory The whole of the ballast was taken away from the joint sleeper, and the train allowed to pass over it and there was only a slight deflection. At the termination of the discussion, the President, who took considerable interest in the subject, said he would be glad to know the result of a trial on a main line. —*Lond. Min. Jour.*

An Express Locomotive.

The Secretary then read a paper by Mr. Weallens, of Newcastle, which was accompanied by drawings. The engine was manufactured by Messrs. R. Stevenson & Co., for the York, Newcastle and Berwick railway. It had an inside cylinder with a crank axle and six wheels, with inside bearings for the crank axle and outside bearings for the leading and trailing axles, and the valves were placed on the outer side of the cylinders, instead of inner side as usual.

The Presdent, Mr. M'Connell and others made a few remarks, observing that there was some advantage in detail in the arrangement of the engine.—*Ib.*

Railway Wheels.

The Chairman then called upon Mr. Henry Smith, of West Bromwich, to explain the principle of his new solid wrought-iron wheel, one of which was exhibited to the meeting, together with numerous drawings. The paper was contributed at the request of the Council of the Institution, and the explanation of his invention was accompanied by tables of the results of experiments made to ascertain the resistance of the atmosphere to spoke and disc wheels, and an appendix of accidents resulting from defective wheels. Mr. Smith introduced the subject of his paper by referring to the present mode of making spoke wheels, in order to contrast it with his invention, and then proceeded to explain the *modus operandi* of the improved manufacture.—Briefly the method employed is this:—In the first place, a straight bar of hammered or rolled iron is taken, about four inches wide, and sufficiently long to form a hoop of such a diameter as is most suitable to form the intended wheel. Other pieces of bar iron, laid flat and close together, and cut in lengths to the same circle as the hoop, are then taken to form the base of a "pile." The hoop is then placed upon this foundation and filled with scrap iron. The whole is then put into a reverberatory, or heating furnace, and when at a proper heat, is hammered to form a mould: the face of the hammer is recessed in such a shape as to form an approximation to the shape of one side of the finished wheel, but of a smaller diameter; the anvil face is flat. Two of these moulds are then put together, back to back, heated in a similar way, and hammered between tools of the same form and size as the finished wheel; but these tools embrace only a segment of about one-fifth part of the entire wheel, and the mould is turned round during the process, and is thus hammered out to the form and size of the required wheel. The wheel is then put into an annealing furnace, and planished between similar tools to the form of the finished wheel. The wheel then only requires turning in a lathe and the centre boring out. By this mode Low Moor, or any other description of iron or steel, can be used for the tyre of the wheel, and thus in all cases ensure a clean wearing surface and a compound character of fibrous and granulated iron, which it is believed no other present system of making wheels affords.—The paper having been read, the Chairman said he thought that the thanks of the meeting were due to Mr. Smith for his very interesting paper. and he therefore moved that they should be voted to him.—The motion was carried by acclamation. In answer to a a question by the chairman as to the cost of the wheel, Mr. Smith remarked that he would be

happy to put himself in competition with other parties. He had already made 200 of these wheels and the one before the meeting had been made that day. When struck with a hammer, the sound given out was like that of a bell, showing the perfect soundness of the wheel, and the closeness and unity of the material. The hammer used in the manufacture was 9 tons; the weight of the wheel, 4¼ cwt. Some of the wheels are at present at work on the Bromsgrove line. The Chairman remarked that it occurred to him, as the body of the wheel was not so soon wore out as the tyre, and when it required renewal, a secondary process, so to speak, would have to be gone through, it was both troublesome and expensive to forge the tyre on. Why not make it a disc, without this expense and trouble?—Mr. Smith remarked that it was no more trouble or expense to make it with the tyre than without it.—It was easily done. To those who had to tyre the wheel again it would certainly be a little more troublesome, but he considered that the iron, forged as his was, was more durable than any rolled tyre, and the friction of breaks would affect it less.—Some conversation then arose as to the merits and defects of cast-iron disc wheels, Mr. Beyer inclining favorably to cast-iron; but in answer to a question by the chairman, he said he should not prefer cast-iron, only he could never understand why such wheels were not used.—The Chairman remarked, that in rapid railway travelling, they must all admit, as a body of engineers, that wrought-iron was better than cast iron for such purposes. He thought that in Mr. Smith's wheel it would be preferable if the tyre was left out of the question, the disc being forged, and the tyre put on afterwards.—Mr. Smith urged that the cost of making the wheel would be less if the tyre was forged solid with it. The tyre would then wear longer than the ordinary tyre, and it was a matter for deliberate consideration whether the additional safety it gave was not with a little extra expense in first re-tyring.—tMr. Allen, of Crewe, remarked that the disc part of he wheel would be almost everlasting; it would, last 100 years.—The Chairman said that he was of opinion that the invention was a very excellent one, leaving the question of tyre out altogether. He considered that the railwey world was very likely to be greatly indebted to Mr. Smith, for his excellent wrought-iron disc wheel, and he saw no reason why it should not come into extensive use. He had some doubt whether it was desirable or essential, for the sake of a small amount of additional safety for two or three years, to incur the expense of forging the tyre on the wheel. He did think the mode of manufacturing the wheel was highly interesting and it was a triumph in forging that he was not prepared for.—*Ib.*

Explosion of Steam Boilers Prevented by Electricity.

On Thursday last, Mr. Arthur Dunn delivered a lecture on this interesting subject, at the City of London Literary and Scientific Institution, Aldersgate street. The lecturer commenced, after alluding to the general importance of the subject, by observing that all were aware of the frequent occurrence of these fatal steam-boiler explosions; the evils of them were not merely confined to the destruction of life and property, which were unavoidably its concomitants; bt, unfortunately, they were attended by a subsequent loss, which, though not so fatal in its effects, was productive of great injury to the working classes, as but few cases occurred which were not followed by numbers of operatives being thrown out of employment, and, in some instances weeks elapsed previous to the injury being so repaired that they could again resume their avocations.—Mr. Dunn gave here an account of the several explosions that had recently occurred, particularly referring to the late one in Whitechapel. A few days after the explosion, with the permission of Mr. Keys, he had inspected the remains of the boiler; he had been told by several men on the establishment that not ten minutes previous they had passed the boiler, and to them it appeared to be sound, and no danger to be apprehended; he had minutely examined the boiler-plates, which were of the usual thickness, so that in that case there could be no ground to imagine that the boiler was unsound, or out of repair, being ⅜ths of an inch in every place where the plates were torn.

Steam boiler explosions were caused either by over pressure, want of the proper quantity of water, and over temperature; the two first resolved themselves into the latter, which was the sole cause of the explosions. It was a singular fact, that boiling water when placed on red hot iron ceased to boil.—The celebrated chemist, Klaproth, had read a paper on this to the French Academy of Sciences about 1802, though this discovery had taken place some time previously. [Mr. Dunn here successfully illustrated the experiment by pouring boiling water from a vessel into a round iron saucer, made red hot by means of a spirit lamp.] Mr. Grove had decomposed water by heat alone; but it required for that purpose intense white heat. Freed from atmospheric air, it could be heated above its ordinary boiling point without generating steam; Donny had made several experiments which had proved this. If covered with a stratum of oil, this would occur. A practical proof of this he had experienced but a short time since. He had a small quantity of water in a common Florence flask; this was covered with a slight stratum of oil. A spirit lamp was placed underneath it; but before any steam was generated, or the least warning given that it was at boiling point, it exploded—the water being thrown to some considerable distance. Inventions have at various times been brought before the public—such as whistles, and various indicators attached to pressure gauges, also self-acting valves. All are dependent upon steam pressure, and not temperature, and as liable to get out of order as the valve generally used. He had first thought of this invention some years since when in America. He was engaged in experiments to dissolve silica in close boilers under the action of caustic soda lye; this caused such an incrustation on the valve, that it was firmly cemented into its seat, and, consequently rendered useless. To obviate this difficulty he had recourse to the use of a common thermometer, plunged into a mercury chamber; this led him to the idea of constructing a thermometer which should indicate any given temperature by audible signals.

Mr. Dunn here exhibited a handsome model of a boiler with the tubes; to these were attached copper wires, which communicated with bells placed at different parts of the lecture room. On the rising of the mercury by an increased temperature, the elastic circuit was completed and signals were immediately given, proving that the boiler was getting beyond its proper working temperature. Diagrams of different sections of the boiler were likewise shown, and fully explained. If this invention was generally in use explosions could invariably be avoided, as the moment there was too high a temperature the boiler would signalise, and it would then be the place of the engineer to discover where the fault lay. He could not believe that any man would be so foolhardy as to neglect a boiler, after it had plainly told him there was something the matter with it.

The principal points in the invention were its unerring action, trifling cost, and its dependence entirely upon temperature. The signals could be made at any number of places at once; a bell could be fixed in the engine room and the office; it was applicable to all boilers; the captain in his cabin, or the manufacturer in his counting house, could rest satisfied his boiler was working safely. From the simplicity of the invention it is not liable to get out of order; signals such as pistols, detonating caps, &c., may be used; but as damp might affect these he had preferred the simple action of the bell. It could be applied to the steam gauges now in common use; but these could not be recommended, as they were dependent upon pressure instead of temperature, which is the only secure criterion of safety. There was no difficulty in keeping the batteries in action. He had a boiler in use with this apparatus for five months, and on two occasions he proved the practicability and utility of his invention.

The result of his practical experience had convinced him that the sole cause of explosions was a carelessness with regard to the temperature—no one ever knew a boiler to explode without a fire under it; he trusted that his simple invention might be a small means of preventing these dreadful accidents, his invention was now before the public to stand on its own merits and demerits, and all that he demanded for it was a "clear stage and no favor." Mr. Dunn likewise exhibited a gauge, to control by electricity a required amount of pressure, so that if 10 lbs. were required, and 15 lbs. were shown on the gauge, the signal was made so that the engineer might reduce it to the required amount. An explanation was given of the method of obtaining motive power to ring the bells by the large magnet which is well known by those who are aware of the system by which the electric telegraph is worked.—We regret our limits have not allowed us to follow Mr. Dunn more fully, but we trust at an early opportunity to see his boiler in action, when we shall give a more detailed description of its merits.—*Ib.*

Railroads in Georgia.

We are happy in being able to present the following connected view of the railway system of this state, copied from the Savannah Republican, which is a sufficient voucher for its accuracy. When the lines proposed shall be completed, no state in the Union will have made such ample provision for its people in the shape of railway accommodations, and in no state has the experiment of railway construction met with more triumphant success.

The enterprise of the people of Georgia, unostentatiously displayed in constructing the splendid lines of railway now in operation, has astonished our brethern of the northern and south-western portions of the Union. In railroad reports, in the public journals, in the letters of intelligent travellers, every where, do we find evidence of the high estimation in which our state is held. We would not boast at this state of things; rather would we seek to show what yet is wanting to perfect the system of internal communication, so that the people of every quarter of our dominion could have the same advantages which the railways now in use afford.

We propose in a few brief articles to give a succinct account of the roads now in operation—now built, and at what cost—to show what lines are projected and being constructed, and what will probably be their influence—and then to exhibit a plan by which the state can, at a very trifling expense, complete a system of so general benefit that, for a generation yet to come, no further outlay of capital will be necessary.

The Macon and Western railroad, the phœnix of the *old Monroe road*, first claims our notice. The Monroe road was projected to run from Macon to Forsyth, and afterwards the project was extended to Atlanta, Georgia. It was a bold movement in its inception, but hazardous in the extreme, for when its authors started, there was no prospect of a road below Macon or above Forsyth. When it was determined to build the Western and Atlantic and Central roads, the Monroe Company was to form the connecting link between them, and thus was a way looked for from the Tennessee river to the city of Savannah. After many struggles & the establishment of the present flourishing town of Griffin, the company failed—its affairs went into chancery and the road was sold. It is now in new hands—has been completed and in operation for near three years, and is doing a splendid business. A million of dollars was lost to the people by the old company but the new company has finished a road worth over a million of dollars—on an outlay of not much over half a million. We shall consider the cost of the road, 101 miles in length, at $1,500,000.

The Georgia railroad, from Augusta to Atlanta, 171 miles, was finished about three years ago. It has a branch of 40 miles in length to Athens. It has cost, in round numbers with all its equipments, $3,500,000.

The Central road from Savannah to Macon, 191¼ miles, was finished five years ago. Its cost, from first to last, with its equipments, may be placed at $3,000,000.

The Memphis Branch railroad, seventeen miles long, from Kingston, on the Western and Atlantic railroad to Rome, at the head of the Coosa river, has been finished within the last year. We do not know its cost, but it may be fairly put down at $130,000.

These four roads, together 520 miles in length, were built *entirely by individual and city corporation subscriptions.* Not a dollar was ever advanced to either of the corporations of the state.

The Western and Atlantic road, 140 miles in length, from Atlanta to Chattanooga, on the Ten-

nessee river, in the state of Tennessee, was opened to Dalton, 100 miles, about two years ago, and will be opened to Chattanooga on or about the first day of November next. Then will Georgia have a line of railroad from Savannah to the Tennessee river, of 432 miles—and a line from Augusta to Atlanta of 171 miles, besides the branches to Athens and Rome. These lines will, in a brief period, be extended through the Nashville and Chattanooga road to Nashville.

The Western and Atlantic road has been built by the state out of the public treasury. All the citizens of the state, therefore, have contributed in equal proportion to the erection of this great road—an everlasting monument of the wisdom and liberality of the State Legislature. Its cost, with equipments, when completed, may be placed at the sum of $4,000,000.

Thus have six hundred and sixty miles of railroad been constructed and equipped within the last fifteen years at a cost of about $12,000,000, *two-thirds* of which amount have been furnished by individual enterprise and exertion, and one-third by the state.

Of the skill and perseverance displayed in these truly great works, or of the effects of the roads on the prosperity of the people, we need not say a word. *The roads shall speak for themselves.*

The South-Western railroad is the chief road of those projected and under way. It is to run from Macon across Flint river, near Traveler's Rest, to Fort Gaines, on the Chattahoochee—distance about one hundred and fifty miles—estimated costs, one and a half millions of dollars. The object of this work is to develope the beautiful and fertile portion of the state commonly known as *South-Western Georgia*—the finest region for the cultivation of cotton in all the south, and to bring the products of it to an Atlantic market at Savannah. The road is destined, in our opinion, to be part of a great line which will terminate at Pensacola, and thus to be part of the greatest contemplated line in the Union—a line of ocean steam ships and railroad from New York to New Orleans, which can convey passengers between these important cities in ninety-five hours. The subscriptions to this magnificent work have reached $650,000, over five hundred hands are at work, about twenty-five miles of the road are graded, and the whole work to the western bank of Flint river, is progressing in so spirited a manner as to leave no doubt of the crossing of the Flint by the first day of August, 1850.

The influence of this road will be felt throughout the length and breadth of Georgia. There is no portion of the state which is not directly interested in it—it is destined to improve the condition of the whole state and all the railroads now in use. Its advantages may be thus briefly stated:—1st. It will develope the best cotton region of the south. 2d. It will afford in Georgia a market for the cotton grown in the state. 3d. It will be an avenue for the introduction into Georgia of West India produce, and various articles of Western production coming from New Orleans. 4th. It will be an avenue for the productions of the Cherokee Country and Tennessee to the *planting* lands of Georgia and Florida. 5th. It will be part of a great line of travel from Tennessee and parts further west to the Gulf of Mexico. 6th. It will be on the great thoroughfare of the Union from north to south, whether that great thoroughfare shall be by railroad alone or by railroad and steamships—and it will be of incalculable value to the government and people of the United States, as it will connect the most south-western Atlantic port, of ample depth of water, with the very best harbor on the Gulf of Mexico.

The next road in process of construction is the Muscogee road, from Columbus to Barnesville—distance seventy-five miles—estimated cost, about $800,000. The Muscogee Company is at work with considerable force, and has made arrangements, we understand, by which its road will soon be placed under contract—already some twenty-five miles have been let. This road will connect the important city of Columbus with *every other* important point in the state, and with the great improvements north and west, giving to its citizens an outlet to the Atlantic for their products and an inlet for the iron and grain of the mountain region.

The Milledgeville road, from Gordon on the Central road to the seat of Government of the state—distance 16 miles—estimated cost, about $135,000. The object of this road is to render permanent the present seat of government by opening to it railroad communication from all points, and to give to the planters of Central Georgia a way for their products to the sea. As Milledgeville is near the centre of the state and a convenient and healthy position, the object seems to be one of general and great importance. Several miles of this road are graded, and with a little aid, beyond the present subscriptions, the work could be finished within a year.

These *three* roads are only ones now being actually constructed.

Of the *projected* roads, the first is the road from Atlanta, Georgia, to West Point, thence to unite with the Montgomery and West Point railroad.—The object of this work is to connect the Charleston and Georgia railroads with the Alabama and Western improvements. The road is destined to be part of a great thorougfare of travel, and it will open to Atlantic markets the north-western part of the state. The distance is about 90 miles—the cost will be about a million of dollars.

Then there is the road from Augusta to the Central road, at or near the 80 Mile Station. Distance about 53 miles—estimated cost, $530,000. We view this road as *one of vital* importance. It will connect Augusta with Savannah by a shorterand less expensive road than that from Augusta to Charleston—it will bind the upper and lower country in the closest bonds; it will build up the two first cities of Georgia, and will do more to throw the advantages of Georgia roads into Georgia's sea-ports than any other work which has been or can be devised.

The five roads indicated in this article, when finished, would add 385 to the number of miles of railroad now in operation, and run the amount of iron way to over 1,000 miles! The cost of these additional 385 miles will not exceed $4,000,000—and the enterprising citizens of Georgia can and will pay the half, or even more than half that amount, *if the State of Georgia, which hitherto has not given a dollar in aid of individual capital*, will, now that individual capital and liberality have placed the state on ground so high, *and made the outlets for the state's own road*, pay the residue.

We are compelled to brevity; in our next we will endeavor to show *how* the great work of internal improvement in Georgia can be speadily carried out to full success.

—

Since writing the preceding, we have heard that the Muscogee Company has not yet made the arrangement to go to Barnesville to which we alluded. That Company, however, can go to Fort Valley, and there connect with the South-Western road at much less cost than to go to Barnesville, and in our opinion by a better route for the city of Columbus.

It will, we think, be readily conceded that with the 1,045 miles of railway which we have in our preceding articles, pointed out, shall be finished, the State of Georgia will present a system of iron roads unsurpassed by any state in the Union—a system which will answer the exigencies of all parts of the state, not only for the present population, but for more than a generation to come. The commanding position and power of Georgia, in this regard, are the fruits of the enterprise of individual citizens, as we have seen. The state, as a body politic, owes a debt of gratitude to those who have toiled so hard and spent so much money in opening the outlets to the State Road. Unless the avenues from Atlanta, eastwardly, had been opened with the dilligence which has marked their progress, notwithstanding great pressure in the times, the Western and Atlantic road would never have passed beyond the town of Dalton. The people of the *Cherokee* region also owe to their fellow-citizens of all other portions of the state a great debt. Their country has been developed by the enterprise, the talent, and the money of those who do not inhabit their beautiful and interesting section. Every thing has been done for them which can be done for their improvement, their happiness, and their rapid advancement.

South-Western Georgia, an area as large, if not greater, than the *Cherokee Georgia*, now appeals to them, and says that they, at a remote and isolated quarrer, have cheerfully submitted to taxation that the great work which now pours its riches and its blessings over the mountain tops and through the vallies of the north-west, might be finished—that by their votes in the Legislature, and their good word at home and abroad, they have aided in giving wealth and power to the newest territorial acquisition of the state. This appeal of the south-west is irresistible. He will be more than a bold man, who, coming from the mountains, shall stand up to the Legislative Halls and raise his voice against the effort which will be made to do, in small part at least, for the lower country what has been done for the upper. All this is plain enough; already in all quaeters intelligent citizens declare that something must be done by the state for those who have hitherto received nothing from the commen fund. And we are happy to add, the people who have themselves, without assistance from the state, been successful in carrying through the great lines which give value to the State Road, join with the south-west in their appeal, and tender to them their political aid.

If the South-Western road was the only one wanting to complete the general system, not a day would be lost by the next Legislature in granting all the aid necessary to finish it without delay. The whole debt of the State of Georgia *does not amount to two milions of dollars*, and the Western and Atlantic road is worth nearly twice that sum. The state therefore is virtually out of debt. No valid objection, on the score of debt, can be made.

But we know it will be said that if aid be granted to the South-Western raad, there are other roads in progress and projected which will ask aid, and that a system of *log-rolling* will be introduced into the Legislature, and in the end the state will be saddled with an enormous debt. It has been our aim to show that the position of Georgia is better than that of any other state. *We hold it to be clear that with 6 per cent. Bonds of the State to the amount of one and a half million of dollars, not only the South-Western but every other road of general character, projected as well as in progress, can be finished within five years from this day.*

We would then respectfully recommend to the next Legislature the grant of aid to the South-Western, the Muscogee, the Atlanta, the Milledgeville and Waynesboro' railroad companies. Let $500,000 be given to the South-Western company, on condition that a like sum be subscribed by individuals in *cash* or *work*, and that road will speedily reach the Chattahochee. In the same proportion—say one-third of the cost of the roads—let the other companies receive aid, and their roads will be built beyond doubt. In the case of the Milledgeville road, we would recommend a greater proportion of aid say $100,000, because the whole state is directly interested in that work. We repeat that *every work* can be completed by the grant of the small sum of one and a half millions of dollars.

The state cannot loose anything, for it is obvious enough that the stock of either of the roads would pay 6 per cent. dividends. But to avoid all chance of loss to the state, the grant of aid may be coupled with the further condition, that the state shall, within a defined period, receive from the respective companies six per cent. of its advances.

We fear to be considered prolix on this interesting subject. We profess to give only an outline of what we believe to be the true policy of the state.—When it is recollected that the ability which the state now has, with so small an outlay to finish *a perfect system of roads*, is mainly owing to the great labors and the very great sacrifices of comparatively a few of her inhabitants—when those who have borne the heat and burden of the day, ask nothing for themselves, but even plead for those who have come in at the eleventh hour, it does not seem to us, a voice so loud can be sent up to the halls of legislation, that nothing can resist it. We trust that our own people will think of and study this matter, and that they will make at once the only effort now wanting to place our state in a condition of unexampled prosperity.—*Savannah Republican.*

Large Award.

We learn that Judge Williams and Judge White, arbitrators in the important case of M. C. Story and others, railroad contractors, against the Norwich and Worcester railroad company, have just finished their sittings in this city and made their award.—They find about $15,000 due from the company to the contractors.—*Hartford Courant.*

Railway Share List,

ON A PAR OF $100 ACCORDING TO THE LATEST SALES.—CORRECTED EVERY WEDNESDAY.

NAME OF COMPANY.	Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Capital st'k paid in.	Debts more than surplus.	Ruling grade.	Earnings 1848.	Expenses 1848.	Net earnings 1848.	Rate of dividend in 1848.	Price of shares.	Remarke.
Atlantic and St. Lawrence	146	....	36	In progress.....	.....	.....	.....	..	.....	.....	.....	.....	78 *a* 81	
Androscoggin & Kenneb.	55	....	6	In progress.....	.....	.....	.....	..	.....	.....	.....	.....	70	
Albany and Schenectady.	16⅞	....	16⅞	$1,606,196	100,000	.....	.....	..	.....	.....	.....	1 5-9	89	
Auburn and Rochester...	78	....	78	2,644,520	34,000	.....	.....	..	175,922	.....	.....	8	86*a*87	
Auburn and Syracuse....	26	....	26	1,125,886	43,300	.....	.....	..	454,721	.....	.....	2 9-10	80*a*81	
Attica and Buffalo.....	31½	....	31½	821,313	26,000	.....	.....	..	172,185	.....	.....	4½	.....	
Alleghany Portage.....	36	....	36	.....	.....	.....	.....	..	150,959	.....	.....	....	Leas'd to Western railroad.	
Albany and W. Stockb...	38½	....	38½	1,924,701	50,000	.....	.....	..	.....	.....	.....	....		
Annapolis and Elkridge..	21	....	21	.....	.....	.....	.....	..	.....	.....	.....	.....		
Bangor and Oldtown....	11¼	....	11¼	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Boston and Lowell.....	25¾	1½	27½	2,013,687	73,200	1,800,000	.....	10 up, 30 down.	461,339	268,707	192,631	8	118¼	
Boston and Maine.....	74½	5	79½	3,571,832	45,000	3,249,804	249,715	47½	511,627	264,534	247,893	8½	101*a*102	
Boston and Worcester...	41⅛	22	66⅛	4,960,000	74,700	4,500,000	460,000	40	716,284	406,303	310,080	8½	101¼	
Boston and Providence...	41	6½	47½	3,031,106	63,800	2,893,300	26,878	37½	354,375	183,361	170,013	6½	93½	
Bost., Concord and Mont.	90	....	38	In progress.....	.....	.....	.....	..	.....	.....	.....	.....	82*a*85	
Berkshire.....	21	....	21	600,000	28,500	.....	.....	..	.....	.....	.....	7	.....	
Buffalo and Niagara.....	22	....	22	250,396	11,500	.....	.....	..	60,014	.....	.....	6 1-3	.....	
Buffalo and Black Rock.	3	....	3	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Baltimore and Susqueh'a.	36	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Beaver Meadow.....	26	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Buck Mountain.....	....	....	4	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Baltimore and Ohio...	....	....	178	13,136,940	61,900	.....	.....	..	1,468,828	805,530	663,198	.....	43½*a*44	
Washington Branch.	....	....	31											
Frederick Branch...	....	....	3											
Calais and Baring.....	3	....	3	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Concord	34	....	34	.....	.....	1,350,000	.....	..	311,326	180,699	130,639	.....	121	
Cheshire	54	....	54	2,584,143	48,000	1,453,379	1,140,764	60	.....	.....	.....	.....	67*a*67½	
Connecticut and Passump.	115	....	40	.....	.....	.....	.....	..	.....	.....	.....	.....	85	
Connecticut River.....	50	2	52	1,588,184	30,500	1,234,970	426,013	32	165,242	95,658	69,583	8	96½	
Cape Cod Branch.....	28	....	28	587,116	20,900	343,000	217,395	40	.....	.....	.....	.....	62	
Corning and Blossburgh..	....	....	40	.....	.....	.....	.....	..	18,069	.....	.....	.....	.....	
Cayuga and Susquehanna	29	....	29	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Camden and Amboy...	61	..	96½	3,200,000	33,000	.....	.....	..	.....	.....	.....	.....	140 *a* 142	
Trenton Branch.....	6½													
New Brunswick Br..	29													
Columbia.....	82	....	82	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Camden and Woodbury..	9	....	9	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Cumberland Valley.....	....	....	52	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Carbondale & Honesdale.	26	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Chesterfield.....	12	....	12	150,000	13,500	.....	.....	..	.....	.....	.....	.....	.....	
City Point.....	9½	....	9½	195,867	15,919	.....	.....	..	.....	.....	.....	.....	.....	
Central of Georgia.....	191	....	191	3,222,289	16,800	.....	.....	30	516,252	266,450	250,226	.....	80	
Central of New Jersey...	63	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Dorchester and Milton...	3½	....	3½	114,224	35,100	72,990	41,234	39	.....	.....	.....	.....	74	
Detroit and Pontiac.....	25	....	25	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Eastern	54	19¾	73¾	.....	.....	.....	.....	40	.....	.....	.....	8	103	
Essex (Salem to Law.)...	22½	....	22½	421,574	18,700	263,746	160,958	55	.....	.....	.....	.....	.....	
Erie and Kalamazoo.....	33	....	33	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Fall River.....	42	....	42	1,145,982	27,300	1,050,000	83,177	45	184,344	109,390	74,953	7½	85½	
Fitchburgh.....	49½	6½	56	2,945,630	52,300	2,735,910	67,504	..	486,265	286,046	200,219	8½	110¼	
Franklin.....	....	....	22	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Greensville and Roanoke.	21	....	21	283,917	13,500	.....	.....	..	.....	.....	.....	.....	.....	
Germantown Branch.....	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Gaston and Raleigh.....	96	....	96	.....	.....	.....	.....	..	.....	.....	.....	.....	88 *a* 90	
Georgia (Augusta to At'a)	171	....	210	.....	.....	.....	.....	40	477,052	267,173	209,879	.....	121	
Athens Branch.....	....	39												
Harrisburg and Lancaster	37	....	37	1,183,257	31,979	609,550	573,707	49	121,350	37,386	83,963	6	96 *a* 97	
Hartford and New Haven	62	....	62	.....	.....	.....	.....	17	.....	.....	.....	.....	104 *a* 105	
Housatonic.....	74	....	74	.....	.....	.....	.....	..	.....	.....	.....	.....	87	
Hudson and Berkshire...	31½	....	31½	818,983	26,500	.....	.....	..	.....	.....	.....	.....	.....	
Hazleton and Lehigh....	10	....	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Jackson and Brandon....	13	....	13	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Lexington and W. Camb.	6½	....	6½	252,680	38,900	.....	.....	55	.....	.....	.....	.....	.....	
Lowell and Lawrence....	12½	....	12½	283,248	22,650	.....	.....	45	.....	.....	.....	.....	85	
Long Island.....	98½	....	98½	2,173,646	22,100	.....	.....	..	.....	.....	.....	.....	23½	
Lockport and Niagara...	23	....	23	221,000	9.700	.....	.....	..	.....	.....	.....	.....	.....	
Lewiston.....	3½	....	3½	33,673	10,300	.....	.....	..	.....	.....	.....	.....	.....	
Lykens Valley.....	16	....	16	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Little Schuylkill.....	23	....	23	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Louisa.....	50	....	50	474,137	9,482	.....	.....	..	.....	.....	.....	.....	.....	
Lexington and Frankfort.	29	....	29	450,000	15,600	300,000	.....	61	50,000	30,000	10,000	.....	82*a*85	
Little Miami.....	84	....	84	1,513,402	18,000	.....	.....	..	.....	.....	.....	.....	.....	
Machiasport.....	8	....	8	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Morris and Essex.....	....	....	45	.....	.....	.....	.....	80	.....	.....	.....	.....	100	
Mauch Chunk and R. Run	36	....	36	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Mine Hill & Sch. Haven.	25	....	25	.....	.....	.....	.....	..	.....	.....	.....	.....	136	
Mount Carbon	7	....	7	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Mt. Carbon & Pt. Carbon	2⅛	....	2⅛	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Mill Creek.....	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Montgomery & W. Point	67	....	67	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	

Railway Share List,

ON A PAR OF $100 ACCORDING TO THE LATEST SALES.—CORRECTED EVERY WEDNESDAY.

NAME OF COMPANY.	Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Capital st'k paid in.	Debts more than surplus.	Ruling grade.	Earnings 1848.	Expenses 1848.	Net earnings 1848.	Rate of dividend in 1848.	Price of shares.	Remarks.
Madison and Indianapolis	86	....	86	.....	.....	.....	.....	..	.....	.....	.....	.....	110	
Mad River and Lake Erie	102	....	102	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Mansfield and Sandusky.	....	....	56	$1,106,121	19,700	.....	.....	..	.....	.....	.....	.....	.....	
Michigan Central.....	....	....	221	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Michigan Southern.....	....	....	70	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Tecumseh Branch.....	10	....	....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Macon and Western.....	....	....	101	328,091	6,218	.....	.....	30	140,970	63,243	78,722	.....	48a48½	
Mississippi.....	....	....	30	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Nashua and Lowell.....	....	....	14½	525,063	36,200	525,000	.....	13	169,187	109,599	59,588	10	.....	
Northern (Ogdensburg)..	....	....	12	In progress.		.....	.....	..	.....	.....	.....	.....	.....	
" (Concord to Leb'n.)	69½	}	....	2,762,500	34,000	.....	129,978	..	408,455	241,370	167,277	.....	75½	
Bristol Branch.....	12½	}	81½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
N. Bedford and Taunton.	....	....	20	499,065	24,998	400,000	.....	40	136,151	96,220	39,225	6	.....	
Norfolk County.....	....	....	26	621,488	23,900	414,256	.....	35	.....	.....	.....	.....	37	
N.Y. & N. Haven (14 mls.	Har	RR)	62	.....	.....	.....	.....	..	.....	.....	.....	.....	90a91½	
New Haven Canal.....	....	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Norwich and Worcester..	59	7	66	2,187,829	33,100	.....	.....	32	218,073	170,297	.....	.....	36	
New York and Harlem..	....	....	80½	3,579,567	44,600	.....	.....	..	.....	.....	.....	.....	54½	
New York and Erie.....	....	....	200	.....	.....	.....	.....	..	.....	.....	.....	.....	60¾	
New Jersey.....	....	....	29	.....	.....	.....	.....	..	.....	.....	.....	.....	108 a 110	
Newcastle & Frenchtown	....	....	17	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
N. Orleans and Carrollton	....	....	5½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Old Colony.....	37½	7½	45	2,080,903	46,200	1,601,415	683,648	40	227,350	139,592	87,757	6½	78	
Oswego and Syracuse....	....	....	41	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Portland, Ports. and Saco.	51	....	51	1,350,000	26,400	.....	.....	..	.....	.....	.....	6	95	
Peterboro' and Shirley...	12	....	12	208,311	17,300	.....	.....	..	.....	.....	.....	.....	.....	
Pittsfield and N. Adams.	18¾	....	18¾	447,755	24,000	.....	.....	66	.....	.....	.....	.....	.....	
Providence and Worcester	43½	....	43½	1,873,895	43,000	.....	573,058	26	193,844	83,889	109,954	.....	82½	
Paterson and Hudson R..	16½	....	16½	.....	.....	.....	.....	..	.....	.....	.....	.....	110a111	
Philadelphia and Trenton	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	10	130 a 140	
Philad. Wilm. and Balt..	97	....	97	6,173,851	66,000	.....	.....	..	638,142	382,608	.....	.....	54	
Philadelphia City.....	6	....	6	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Philad. Germ. and Nor..	17	....	17	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Philadelphia and Reading	93	....	93	.....	.....	.....	.....	..	.....	.....	.....	.....	33¼	
Penn Township.....	2	....	2	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Petersburg.....	59	....	59	946,361	16,040	.....	.....	..	163,092	87,131	.....	.....	.....	
Ponchartrain.....	4½	....	4½	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Pt. Hud., Jack. and Clint.	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Rensselaer and Saratoga.	25	....	25	661,910	26,400	.....	.....	..	.....	.....	.....	.....	.....	
Ramapo and Patterson...	15	....	....	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Rich. Fred. and Potomac.	75¼	....	75¼	1,474,004	19,459	.....	.....	..	206,858	100,568	.....	.....	.....	
Richmond and Petersburg	22	....	22	877,484	39,886	.....	.....	..	.....	.....	.....	.....	.....	
Sullivan.....	28	....	28	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
South Shore.....	11½	....	11½	255,748	22,200	135,935	128,075	35	.....	.....	.....	.....	33½	
Stony Brook	13	....	13	246,659	19,000	216,829	29,189	40	.....	.....	.....	.....	.....	
Stonington.....	50	....	50	.....	.....	.....	.....	..	.....	.....	.....	.....	54	
Saratoga and Washington	40	....	40	948,372	23,700	.....	.....	..	.....	.....	.....	.....	.....	
Syracuse and Utica.....	53	....	53	1,968,036	37,060	.....	.....	..	677,671	.....	.....	.....	120 a 121	
Schenectady and Troy...	20½	....	20½	659,668	32,100	.....	.....	..	47,025	.....	.....	.....	.....	
Saratoga and Schenectady	22	....	22	331,036	15,000	.....	.....	..	57,018	.....	.....	.....	.....	
Summit.....	2	....	2	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Schuylkill Valley.....	14	....	14	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Shamokin.....	22	....	22	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Swatara	4	....	4	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Seabord and Roanoke...	....	....	76½	1,519,140	20,460	.....	.....	..	.....	.....	.....	.....	.....	
S. Carolina Main Stem	136	....				.....	.....	..					.....	
Columbia Branch...	....	68½	242	5,943,678	24,500	.....	.....	..	800,073	308,802	401,271	.....	.....	
Camden Branch.....	....	37½				.....	.....	..					.....	
Sangamon and Morgan..	56	....	26			.....	.....	..	.....	.....	.....	.....	.....	
Taunton Branch.....	....	....	11	305,085	27,600	250,000	.....	35	108,101	90,485	17,615	.....	.....	
Tonawanda	43¼	....	43½	974,865	22,400	.....	.....	..	218,301	.....	.....	.....	.....	
Troy and Greenbush.....	6	....	6	273,625	45,900	.....	.....	..	60,055	.....	.....	.....	.....	
Tuckahoe & James River	4½	....	4½	69,322	14,999	.....	.....	..	.....	.....	.....	.....	.....	
Tallahasse and Port L...	....	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Tuscumbia and Decatur.	....	....	44	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Utica and Schenectady...	78	....	78	3,161,688	40,500	.....	.....	..	795,239	.....	.....	10	123a125	
Vermont and Mass.....	69	....	69	.....	.....	.....	.....	55	.....	.....	.....	.....	41½	
Vermont Central.....	121	....	69	In progress.		.....	.....	..	.....	.....	.....	.....	48	
Vicksburg and Clinton...	....	....	46	.....	.....	.....	.....	..	.....	.....	.....	.....	7¼	
Western.....	117¾	....	117¾	7,975,452	67,700	.....	.....	83	1,332,068	.....	.....	8	102a102½	
West Stockbridge.....	2½	....	2½	41,515	15,000	.....	.....	..	.....	.....	.....	.....	.....	
Worcester and Nashua..	45	....	45	.....	.....	.....	.....	48	.....	.....	.....	.....	50a51½	
Wrightsv, York & Gettys.	....	....	13	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Whitehaven and Wilkes.	....	....	20	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Williamsport and Elmira	....	....	26	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Westchester Branch.....	....	....	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
West Feliciana.....	....	....	24	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Winchester and Potomac.	....	....	32	509,415	15,919	.....	.....	..	.....	.....	.....	.....	.....	
Wilmington and Weldon	....	....	163	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Westminister Branch....	....	....	10	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	
Western and Atlantic...	....	....	100	In progress.		.....	.....	..	.....	.....	.....	.....	.....	
York and Maryland Line.	....	....	21	.....	.....	.....	.....	..	.....	.....	.....	.....	.....	

AMERICAN RAILROAD JOURNAL.

Saturday, June 30, 1849.

The Hewson-Pier for Bridges.

The stone bridge, with its piers, is an expedient that grew out of the difficulties presented to the progress of man by a Tiber;—the suspension bridge, with its towers, out of those presented to his progress by a Thames:—but both of these, admirably as they are adapted to the difficulties from which they took rise, fall far short of those which therefore call for a new expedient on the banks of an Ohio or a Mississippi. American engineers have felt this—and attempting to overcome it, have, like M. Wiebekin, of Bavaria, done miracles of construction in timber, but they have, unfortunately, confined their attention to the superstructure, overlooking the fact that an immense, and in some cases an insurmountable difficulty, lay in the question of foundations. Beyond a certain depth the construction of piers for the arch or towers for the chain may be considered impossible, and in widths exceeding some 5 or 6 hundred feet, bridging is consequently out of the question. The physical features of this country, in many places, present therefore to the social and commercial intercourse of the people an obstacle, which, notwithstanding the facilities of steam, cannot be completely surmounted without the introduction of a power to sustain the weight of a bridge.—We have been led into these remarks by an invention of Mr. M. Butt Hewson, which promises to make a valuable addition, especially in this country, to the resources of the Civil Engineer. Mr. Hewson has favored us with the following extract from the specification of his invention, and we have great pleasure in placing it under the consideration of our readers:

"A body, specifically lighter than water, being held under that fluid will exert through its centre of gravity a vertical upward pressure equal to the difference of weight between itself and a volume of water of the same bulk. Now suppose it to be held by iron rods attached to a weight fixed at the bottom of the water, the rods being so disposed that they resist not only the vertical force of the floatation, but also the horizontal force of currents and the like; it is very plain that under such conditions the body will maintain at all points a constant position with a rigidity in the vertical line equal to its buoyancy. Consequently, by attaching hollow caisoons of iron or timber to corresponding caisoons loaded with ballast and sunk at the necessary intervals across a river, these hollow caisoons being held by chains, from the ballast at a fixed level below the lowest water-line, points of resistance for the roadway of a bridge can be established without any other limit to the rigidity of those points than the conditions of the water-way or the strength of the material."

The plan of this bridge embraces the principles of the pier and the floating bridge, with the advantages of being applicable to any depth of water, of presenting but a slight resistance to the current, and capable of being converted into a draw bridge at pleasure, by an hydraulic turn-table within the pier.

In England, where it becomes desirable to cross a water-course, over which, from its depth or width, a common bridge is not practicable, railroad trains are received on board steamboats of immense size and costly construction, and transported from one bank to the other. By the adoption of this plan, which is perfectly in harmony with natural laws, the tedious and expensive process adopted] in England might be entirely avoided, and bridges thrown over rivers that are now looked upon as presenting insurmountable obstacles to such works.

Mr. Hewson is a gentleman of high scientific attainments, and we think his plan will arrest the attention of those interested in these constructions.

Ohio.

Scioto and Hocking Valley Railroad.

We have before us the address of J. V. Robinson, Chas. A. M. Damarin and B. F. Conway, Directors to the voters of Scioto County, in relation to the subscription by this county to the stock of this road. The corporation of Portsmouth has already subscribed $100,000 to this object, and the county is now called upon to subscribe as much more.

If the road depended upon its subscription, the county might well increase the sum to $500,000, because its construction would more than double its present valuation. Where capital is abundant, it is well to leave the construction of public works to associated individual effort, because the more direct the interest, the cheaper roads are built, and the better are they managed, and the less likely to be pushed beyond the wants of the business community.—Still, where a work like the above road is a public benefaction, the advantages of which all reap in proportion to the property they own, the cost should be shared in the same proportion. Where too the work is felt to be one of public necessity, and the want of private capital makes the resort to corporate bodies, such as towns and counties necessary; where the united strength of the whole community is essential to success, and sacrifices are required to secure the object in view, those who are more immediately intrusted with the care and superintendance of the work are generally actuated by the common sentiment that pervades the community, and this affords the best pledge for the faithful performance of their duties; and roads build under such circumstances are among some of the best managed and best paying roads in the country.

We hope the appeal of these gentlemen will be promptly met. There is certainly strength enough on the line of the proposed road if properly combined to build it without embarrassing in any degree those interested in its construction. We have no doubt of the road paying well as an investment, independent of the indirect advantages that will flow from it. We look upon the western roads that are well built and properly managed as most certain to be the best paying roads in the country. The great fertility of soil in that section, capable of sustaining a most dense population, the vast amount of their surplus of agricultural products, which, from their bulky nature, must pay a large freight, and the difficulty of transporting them over their common roads, all these causes combined, cannot fail to make their railroads profitable, more especially those like the one proposed, which run at right angles to the leading water courses.

Wrought-Iron Wheels for Railways.

Our readers will see on another page an interesting account of the manufacture of these wheels in England, where they are much used, as well as on the Continent from their superior safety, for reasons that must be apparent to all. The Hudson River Railroad, which proposes to run its cars at a high speed, has imported a quantity of these wheels for their road.

The only establishment in this country engaged in the manufacture of these wheels is that of E. S. Norris, at Schenectady, in this state, from which roads can be supplied cheaper, and probably with a better article than the imported wheel. We hope to see them introduced for the purpose of fully testing their qualities, when compared with the cast iron wheels, as well as the relative expense of the two kinds.

Panama Railroad.

The books of subscription to the capital stock of the Panama Railroad Co., were opened on Wednesday last in this city, and before three o'clock the whole amount was subscribed. The following is said to be the result of the surveys recently made of the route:

Whole length from sea to sea, not exceeding.46 m.
Summit level, under.....300 ft.
Curvatures, with no radius less than.....1,500 ft.
Grade for about 26 miles, from Atlantic to Chagres river, nowhere exceeding (per mile).....20 ft.
From summit level, for about 3 miles, nowhere exceeding (per mile(.....50 ft.
And thence descending about 7 miles to the Pacific.

Materials of stone and timber abundant, and of good quality; and an excellent harbor at Navy Bay six miles distant from Chagres.

We have not yet seen a copy of the report. If the above estimates are correct the route is very favorable to the construction of the road.

Maine.

The Androscoggin and Kennebec Railroad.—The Androscoggin and Kennebec railroad holds its annual meeting at Winthrop on the third of July next, at which time the road is to be opened for travel from Lewiston Falls, a distance of 20 miles, and 53 miles from Portland. The laying of the rails to Waterville, 29 miles from Winthrop, will be completed the present autumn. This will give a continuous line of 82 miles from Portland in the direction of Bangor. Nothing is yet done toward extending the line beyond Waterville, except the obtaining a charter.

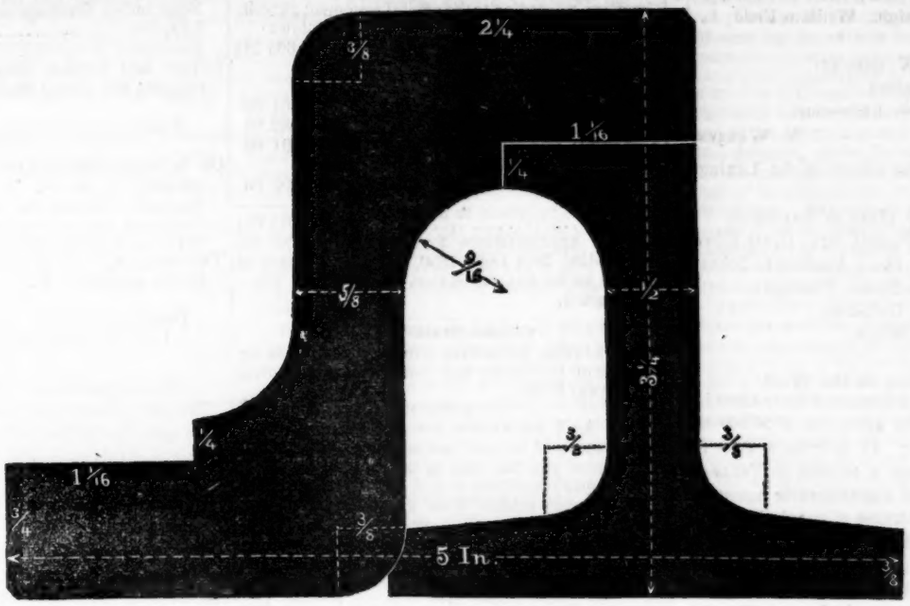
The Kennebec and Portland Railroad.—The Kennebec and Portland railroad will be opened from North Yarmouth to Bath during the present summer. The iron is laid and the engines already pass over the whole distance of 23 miles with iron and lumber trains. At North Yarmouth it connects with the Atlantic and St. Lawrence railroad, so that passengers can reach Brunswick or Bath from Portland.

The Atlantic and St. Lawrence Railroad.—The Atlantic and St. Lawrence railroad will be further opened to Paris during the present summer, probably in season for the annual meeting on the 7th of August next. This will complete 47 miles of the distance towards Montreal. One hundred miles more are required to carry it to the boundary of Canada. To aid this extension the city of Portland has loaned its credit to the amount of $1,000,000.

The Buckfield Branch Railroad.—The Buckfield railroad embranches from the Montreal road, 36 miles from Portland. The grading is nearly completed for 13 miles. One cargo of iron is delivered, and the balance shipped to arrive in September.—The road is to be opened to Buckfield Village, 13 miles, the present autumn.

The York and Cumberland Roilroad.—The York and Cumberland railroad is going forward with a good degree of energy, and the grading is far advanced towards completion as far as Gorhan, 8 miles from Portland. This road is designed to connect with the Boston and Maine railroad at South Berwick, and form part of a second line from Portland to Boston, independent of the Portland, Saco and Portsmouth railroad.

Steele & Middleton's Compound Bridge Rail, February, 1849.



For the American Railroad Journal.

By your notice of the proceedings of the Institute of Civil Engineers on the 8th of May last, we perceive that the views taken by the profession in England on the subject of railroad superstructures, indicate the same defects in existing plans there, as have been observed in America, and that the same remedies are proposed. We therefore take the liberty of submitting to you, and through your Journal to the world, a new plan of rail which we have invented for the purpose of correcting these well known defects, and for which we made application for a patent on the first of March last.

It will be seen by the above sectional diagram, that the rail is intended to be made in two parts so arranged as to break joints, and that the front or Z shaped part is to reverse and present alternately two surfaces to wear; and also that it has a much wider base than bridge rails of the usual form, by which its vertical strength is considerably increased. The centre space is intended to be filled with a core of wood against which the iron portions will be pressed by screw bolts or rivets as may be found the best, which will unite the several parts in a mass equal almost to a continuous rail.

J. Dutton Steele,
Rich'd H. Middleton.

Pottstown, Pa., June 18, 1849.

The above appears to us to possess some decided improvements on the common rail. The hollow cylinder is the strongest form the rail can take with the same quantity of metal. These improvements, therefore, increase the strength of the rail, and by presenting a double surface to the wear, vastly adds to its durability. The two parts of the rail can be made to break joints so as to give the rail the effect of one continued bar. We have submitted the plan of this rail to several scientific gentlemen who have expressed themselves highly pleased with it. We shall be happy to call attention to it in another number, and we hope soon to see its value tested by its introduction upon a line of railway.

NORTH CAROLINA.

Wilmington and Manchester Railroad.

We learn from L. J. Fleming, Esq., resident engineer, that this important road is now under full headway. Its location was completed on the 25th of April last. Contracts have been made for grading nearly the whole line, and in the course of a month the timber for bridging and superstructure will also be contracted for.

The following is a list of the president, directors and engineers of this road:

President—Gen. W. W. Harllee, Marion C. H.

Directors—Gov. E. B. Dudley, J. A. Taylor, Esq., Henry Nutt, N. N. Nixon, of Wilmington, N. C.; Alfred Smith, of Columbus county, N. C.; J. Eli Gregg, of Marion, S. C.; J. S. Gibson, G. J. W. McCall, of Darlington, S.C.; Capt. R. B. Muldrow, Col. J. J. Moore, of Sumpter district, S.C.

Engineers—Maj. Walter Gwynn, of Richmond, Va., chief and consulting engineer.
L. J. Fleming, resident engineer.

Assistant Engineers—T. P. Cooper, Darlington, S.C.; S. S. Solomons, Marion, S.C.; J. D. Barnes, Manchester, S. C.; A. C. Dickinson, Wilmington, N. C.

Sub-assistant Engineers—R. H. Drane, Sumterville, S. C.; W. H. Stith, Darlington, S. C.; J. H. Swift, Columbus, S. C.

General Agent—Rev. J. M. Timmons.

New York.

Buffalo and State Railroad.—The board of directors have chosen Geo. Palmer president of the company; A. P. Yaw, treasurer; and H. C. Frisbee, secretary. D. Richmond, A. P. Yaw, and G. W. Tift, were appointed executive committee. A resolution was passed that it was expedient to enter immediately upon a survey of the route for said road.

The Erie Railroad Company have just purchased 500 tons of iron rails in England, probably in their recent mortgage bonds. The rails will cost the company delivered in New York, less than $42 50 per ton. This is the lowest price at which any railroad iron has been sold.

Ogdensburg Railroad.—The annual meeting of the stockholders of the Northern railroad company was held at Champlain on the 4th inst. Highly satisfactory reports were made by the president and treasurer, and the following persons were chosen directors for the year ensuing, with great unanimity: Robert G. Shaw, J. W. Edmands, B. T. Reed, T. P. Chandler, Boston; Isaac Spaulding, Nashua, N.H.; Charles Paine, Northfield, Vt.; Hiram Horton, Malone, N.Y.; G. V. Hoyle, Champlain; A. C. Brown, Ogdensburg; Geo. Redding, Waddington; Geo. N. Seymour, Ogdensburg; Henry Van Rensselaer, of Canton.

Abbott Lawrence and Geo. Parrish (late president) declined a re-election.

At a meeting of the directors, T. P. Chandler, Esq. was chosen president; W. T. Eustis, treasurer, and J. G. Hopkins, secretary. Votes of thanks were passed to Hon. Abbott Lawrence and Geo. Parish, Esq. for their efficient and valuable services as former members of the board.

Louisville and Frankfort R. R. Office,
Louisville, Ky., June 15, 1849.

To the Editor of the American Railroad Journal:

Dear Sir: Agreeably to your request in your paper of the 9th inst., I will give you the information desired. Our road was chartered in 1847, and the preliminary surveys made by myself in the fall of that year. In the fall of 1848, a section of 27 miles next to Louisville was let for grading, and is now nearly finished; 2700 tons of T rail, weighing 58 lbs to the yard, were purchased, and other materials necessary for the track. We commenced laying track about the 1st of May, and are now laying rapidly—intend to open for running the 27 miles to Lagrange by 1st December. On the 9th July we offer for letting the remaining section of the road to Frankfort, and intend to have it ready for use by 1st July, 1851. We here connect with the Lexington and Frankfort road, which is now being re-laid with a heavy rail, and will make a continuous line to Lexington. Having for nine years been engaged upon the Lexington and Frankfort road, I can give you the returns necessary to fill out your table:—Lexington and Frankfort, 29 miles—no branches—all nearly finished—cost $450,000—per mile $15,500 paid in $300,000—debts not known—grade 61 feet—earnings, 1848, $50,000—expenses 30,000—net earnings 20,000—price of shares per 100, 82 to 85.—Louisville and Frankfort railroad, 65 miles—no branches—in progress—ruling grade 52·8.

President—Thos. Smith, of Newcastle.

Directors—John J. Jacob, James Guthrie, John Hulme, Virgil Mc. Knight, William Field, L. L. Shrene, of Louisville.

Secretary—George W. Barclay.

Engineer—C. N. Warren.

Very truly yours,
C. N. Warren.

The following are the officers of the Lexington and Frankfort road:

President—Abram D. Hunt, of Lexington.

Directors—Richard Pindell, Benj. Gratz, Edward P. Johnson, Francis K. Hunt, Madison C. Johnson, of Lexington; Orlando Brown, Frankfort.

Secretary—James A. Grinstead.

Engineer—Sylvester Welch.

Iron Furnaces in the West.

There are in Ohio and Kentucky thirty-three iron furnaces, which yield an aggregate of 56,000 tons of pig metal each year. In addition to these furnaces in Ohio, there are a number in Tennessee and Illinois which yield a considerable amount of metal, and, with the increase of population in the west, this business is steadily advancing.

Much the largest portion of Ohio and Kentucky metal is disposed of in the Cincinnati market; and it is very seldom that the supply is more than adequate to the demand, or that the former is not about equal to the latter. In consequence of this, and of the article not being one of speculation, prices fluctuate but little, and the ruling rates have been about $26 for cold blast Tennessee and Illinois; 28 for do. Ohio and Kentucky; and 27 for hot blast do.

Of the 56,000 tons of metal produced in Ohio and Kentucky, it is estimated that 22,000 tons is consumed in Cincinnati, for which 600,000 dollars, or thereabouts, is annually paid. From this statement some idea may be formed of the extent of the foundry business in Cincinnati. We shall have something to say on this subject at some future time.

We find in Cist's Advertiser a list of the Ohio and Kentucky furnaces, in 1849, which we append.

HOT BLAST.

Names.	Owners.	Location.
Buena Vista,	H. Means & Co.	Castleburgh,
Starr,	Lampton McCullough,	" [Ky.
Greenup,	Wilson, Scott & Co.	Gallipolis, O.
Pennsylvania,	W. M. Patton & Co.	Greenupsb'g,
Raccoon,	Hollister & Brothers,	" [Ky.
N. Hampshire,	Samuel Seaton,	"
Gallia,	Bently & Thompson,	Gallipolis, O.
Lagrange,	Iron and Coal Co.	Hanging R'k
Vesuvius,	J. W. Dempsey & Co.	"
Mt. Vernon,	Campbell, Ellison & Co	"
Lawrence,	Culbertson, Means & co	"
Pine Grove,	R. Hamilton & co.	"
Union,	Sinton, Means & co.	"
Ohio,	do.	"
Junior,	Gliddon & co.	Franklin, O.
Empire,	do.	"
Centre,	Hamilton, Rogers & co.	"
Franklin,	Gould, Hurd & co.	"
Buckhorn,	Willard, James & co.	Wheelersb'h,
Scioto,	Smith, Masner & co.	" O.
Jackson,	Tewksbury, Adair & co	"
Bloom,	McKinnell & Brothers,	"

COLD BLAST.

Clinton,	W. Patterson & co.	Castleb'g, Ky.
Mt. Savage,	R. M. Biggs,	"
Bellefonte,	W. L. Poage & co.	Amanda, Ky.
Amanda,	Paull & Wurts,	"
Caroline,	Steece, Paull & Wurts	Greenupsb'g,
Laurel,	Wurts & Brother,	"
Keystone,	Green, Griswold & co.	Gallipolis,
Hecla,	H. Blake,	Hang. Rock.
Etna,	Dempsey, Rogers & co.	"
Olive,	Campbell, Peters & co.	Wheelersb'g,
Clinton,	Gliddon, Smith & co.,	" [O.

—*Philad. Com. List.*

Expenses of the Government.

The appropriations made at the recent session of Congress, according to the official statement published in the National Intelligencer, are as follows:

Civil, diplomatic, and miscellaneous	$6,301,605 74½
Military, including fortifications, Indian department, revolutionary and other pensions	7,937,161 96
Naval, including naval pension	9,601,882 91
Post Office Department	4,328,391 00
In fulfilment of the treaty with Mexico	7,260,000 00
Total	$35,329,041 61½

In the appropriations for fortifications, for the year ending 30th June, 1850, there is an item of $40,000 for the fort on Sollers' Point Flats, Baltimore harbor.

Cotton Statistics.

The London Economist publishes the following estimate of the supply and consumption of cotton for the year 1849:

Manchester, April 12, 1849.

Sir: As I have made free use of the cotton statistics contained in your last number, I think it but civil to send you the result of the calculation.

My inquiry has been to find how far we are likely to be overwhelmed with 2,600,000 bales from America, supposing all other countries to send us the same quantity as last year. The Brazilian and other imports I have taken from Hollinshead, Tetley and Co.'s circular, dated December 29, 1848, and have added 30,000 bales to it for imports into London and Glasgow from those countries. The whole growth of America being taken, requires no addition.

The summary of the whole is, that the whole growth of cotton at the present rate, will go into consumption, and that the stock at the end of 1849 will be more likely to be reduced than increased.

According to the tables in the Economist of April 7, 1849, it appears that:

	1848-9	1847-8
	bales.	bales.
The number of bales of cotton taken for consumption in the United States of America from Sept. 1, 1848, (date of the New York Cotton statement,) to March 13, 1849, is	323,626 ag'st	269,595
America has therefore consumed 323,626 bales in 194 days. If 194 days, 323,626 bales; 7 days 11,677 bales weekly.		
Exported from the U. States of America to all other countries, omitting Great Britain, between Sept. 1, 1848, and March 13, 1849—194 days,	307,757 ag'st	358,659
If 194 days, 307,757 bales, 7 days, 11,105 bales weekly.		
Cotton exported from Great Britain to other countries, between January 1, 1849, and Mh. 31, 1849—90 days,	51,200 ag'st	19,500
f 90 days 51,200 bales; 7 days, 3,982 bales weekly export.		
Consumption of Cotton in G't. Britain between Jan. 1, 1849 and March 31 1849—90 days	411,814 ag'st	326,429
If 90 days, 411,814 bales; 7 days 32,030 bales weekly consumption		

	Bales.
Weekly consumption of Cotton in the United States of America	11,677
Weekly exports from America to other countries, omitting Great Britain	11,105
Weekly exports from Great Britain to other countries	3,982
Weekly consumption of Great Britain	32,030
	58,894
If 1 week, 58,794 bales; 52 weeks	3,057,288
Estimated growth of the United States of America	2,600,000
Imported into Liverpool in 1848, of	
Brazilian Cotton	100,201
Peruvian	1,816
West Indies, Carthagena, &c.	4,161
Egyptian	27,820
East India	136,012
Import into London from other places, omitting the United States, suppose	30,080
Total supply of Cotton for 1849	2,900,090
On the supposition that the present rate of consumption should be maintained in England, America and on the continent of Europe, for the remainder of the year 1849, the requirement would be	3,057,288
The estimated growth of Cotton available for the year 1849, is	2,900,090
Deficiency in bales	157,198

I am, sir, yours, very respectfully,
H. Heycock.

Ohio--Her Public Works--Canals.

We have intended for some time past to devote a large space in our Journal to an account of the public works of this state, which is soon to become one of the first, if not the very first, state in the Union in the extent and importance of her lines of railways and canals.

We commence this week with an account of her canals, copied from the Ohio Statesman, which embraces the names and length of the various canals and slack water navigation improvements of the state, together with the cost of construction, as given in the various reports of the Board of Public Works and Auditor of the state.

Names of Canals.	Length in Miles.	Cost.
Ohio and Canal, from Cleveland to Portsmouth, including the Columbus Feeder, &c	334	$4,695,203 67
Walhonding Canal, from Rochester, on the Mohican river, to Roscoe, on the Ohio Canal	25	607,268 99
Miami Canal, from Cincinnati to Dayton, including Hamilton Basin	66	1,020,000 00
Warren County Canal, from Lebanon to Middletown	19	217,552 16
Miami Extension Canal, from Dayton to Junction, where it intersects the Wabash and Erie Canal	115	2,239,517 92
Sidney Feeder, (part of the same work)	13	392,258 32
St. Mary's Feeder and Reservoir, (part of the same work)	11	528,222 07
Wabash and Erie Canal, from Indiana state line to Manhattan, including Maumee and Toledo Sidecuts	91	3,057,177 24
Hocking Valley Canal and slackwater, from Athens to Ohio Canal at Carroll	56	975,481 01
Muskingum Improvement (slackwater navigation,) from the Ohio Canal at Dresden, to Marietta, on the Ohio river	91	1,627.318 27
Total	821	$15,359,999 67

The chambers of the locks on all the canals are from 87 to 90 feet in length, in the clear, and 15 feet wide—admitting boats 78 feet in length and 14½ feet wide to pass through them. The locks on the Muskinghum Improvement have chambers 175 feet long and 36 feet wide, for the passage of steamboats, with the exception of one above Zanesville, which is only 120 feet long and 22 feet wide.

The ascent of the Ohio Canal, from Cleveland to the Portage summit, is 396 feet, which is overcome by 43 locks. From Portage summit to Webbs-

port, the descent is 239 feet, which is overcome by 31 locks. From Webbsport to Licking summit, the ascent is 166 feet, which is overcome by 20 locks, and from Licking summit to Portsmouth, where the canal empties into the Ohio, the descent is 419 feet which is overcome by 55 locks, making the total ascent and descent 1,220 feet and the number of locks 149.

The ascent of the Miami Canal, from Cincinnati to Dayton, is 297 feet—the number of locks 32.

The descent of the Warren County Canal, from Lebanon to Middletown, is 46 feet—the number of locks, 6.

The ascent of the Miami Extension Canal, from Dayton to its junction with the Wabash and Erie Canal, is 213 feet, requirlng 27 locks—the descent is 235 feet, requiring 27 locks—making the ascent and descent 448 feet—the number of locks 53.

The Wabash and Erie Canal from Manattan to the Indiana state line, has an ascent of 176 feet, requiring 26 locks. The Toledo sidecut, a part of the same work, one mile in length, has a descent of 15 feet, requiring two locks—the Maumee sidecut 2 miles in length, has a descent of 63 feet, requiring 6 locks.

The Walhonding Canal, from Rochester to the Ohio Canal, at Roscoe, (25 miles in length) has a descent of 90 feet, overcome by 11 locks.

The Hocking Canal, from Carroll on the Ohio Canal to Athens, (56 miles) has a descent of 203 feet, which is overcome by 26 locks.

The Muskingum Improvement, from Marietta, on the Ohio river, to Dresden, on the Ohio Canal, (21 miles) has an ascent of 126 feet, overcome by 12 locks and 11 dams.

The average per centum paid by the Ohio Canal, on the cost of construction, since 1833, after deducting costs of collections, repairs, &c., is $5 53 on the 100 dollars. The average per cent. on the cost of construction on the Miami Canal between Dayton and Cincinnati, is $3 83 on the 100 dollars. That of the Miami Extension Canal, for three years past is is $1 27 on the 100 dollars. The Wabash and Erie Canal, for five years past, $2 58 on the 100 dollars. These are the only improvements that have paid expenses.

During the five years ending with the last fiscal year, the Muskingum Improvement has sunk $75,629 32 in repairs, cost of collection, &c., over the above receipts. The Hocking improvement in the same time, has sunk $9,257 31, and the Walhonding Canal, within the past five years, has in like manner cost the state $6,235 59 over and above its entire receipts.

Connecticut.

New Haven and New London Railroad.

We are indebted to Alexander C. Twining, Esq., Chief Engineer, for a copy of his survey of this road. We are happy to bear testimony to the clear, business-like manner in which the results of his survey, and of his own observations, are expressed evincing thorough professional skill, united with sound practical common sense. The whole length of the line, as surveyed, is 47,59-100 miles. The grading of many of the sections is expensive owing to the line running at right angles to the main water courses. The following are the estimates of the cost of the road in condition for running:

Entire Estimate.

Grading and fencing	47,590 miles at	$14,924 86	$714,274 00
Track laid,	47,268 " "	7,571 00	357,866 00
Equipments,	47,590 " "	4,708 97	224,100 00
Damages,	47,000 " "	2,000 00	94,000 00
Engineering and superintendance,		5,00	23,795 00
Total cost at $29,628 80,			$1,414,350 00

These estimates are evidently prepared with great care; but they are are qualified with these very sensible observations, which we transfer to our pages:

The object of a preliminary survey and estimate like the one which, under your instructioas, has been made, and the results of which are herein presented, is, simply, to demonstrate the physical and mechanical qualities and conditions of the route under examination, and to deduce the expence of the same with a sufficient accuracy, to direct the judgment of capitalists and friends of the enterprise as to the feasible character of the undertaking. But it is to be presumed that improvements—and often considerable ones—may be made by a revisal of the field work and a thoroughly studied and exact location. Again, there is a great variety of contingencies embodied in every such estimate, suggested by an engineer's experience, and estimated by his judgment, but incapable of exact definition, and embraced under no separate item of "contingencies," but under a general system of liberal allowance in prices and quantities. Still, again, it is plain that the constructions specifically contemplated in such an estimate can only be described in a very summary way, not sufficiently precise for the basis of a business like contract.

There are instances, however, in which railroad companies, or their Boards of Directors, have thought themselves safe in contracting for the execution of the entire work, at the amount of the preliminary estimates, without fixing an exact location and one not to be varied except under the condition of a rigorous computation and allowance for the change in expense—without an exact arrangment of gradients under the same condition; without precise plans and specifications of the dimensions, mode of construction and quality of work in the masonry, carpentry, &c. of the railroad; and, finally without any deduction from the originally estimated sum, to cover *such contingencies* as may properly be accounted *matters of discretion*, and be executed or not, as may be deemed expedient at the time. Now, in every such instance of loose transaction, investigation would doubtless make it appear either that the railroad company is met, at last, with a costly bill of extra work which the liberal allowances in price and quantities in the estimates were intended to cover; or that many items of useful work—although not perfectly essential—have been omitted in the execution, which belong to the same item of *implicit* contingencies; or that the quality of the work is inferior to that which the prices of the estimate were adequate to seeure and cover. In either case it is obvious that, although the road is nominally made for the estimate, it really is not so; or, what comes to the same, that the railroad, as actually constructed, is inferior in excellence and value to that contemplated in the preliminary estimates, and for which the stockholders and Directors had expected and supposed the contract or contracts to be made. I trust that these brief observations will be recognized, in all the importance I give them, by the gentlemen for whom I have the honor to act. They, at least, can hardly be deemed superfluous, since they evince the principles of my own estimates, herewith presented, in which the amounts of "contingencies expressly named and given, are but partially the real amount of contingencies embodied in them.

As to the business prospects of the road we are somewhat doubtful, though we do not profess any critical knowledge of the country through which it passes. As it follows the line of sea coast, it must always encounter the competition of water communication, with which it cannot compete in the carriage of merchandise. At present there is but little business connection between New Haven and New London. When completed, it will form a shorter line of through road between New York and Boston than any other. But as an offset to this, the communication is interrupted by too wide ferriages. As to the inducements to the construction of the road, the report speaks as follows:

The traveller who passes upon this route from New Haven to New London, will be certain to observe, that it is a well settled agricultural region, thickly set with thriving villages. From such a district your railroad—as is evinced by experience in analogous enterprises—would derive a great aggregate of local business. It is striking to observe, on our best thoroughfares, how large a portion of the receipts is the product of the way business; the proper contribution to commerce of the districts traversed by such works independant of the through freight and passage.

The villages, averaging two thousand inhabitants each, and filled with a population of the best competency, both as to enterprise and means, for prosecuting the various branches and occupations of industry, lie upon our track; besides that several back towns, answering to the same descriptions, are within its influence and operative distance. At one extremity is a city of twenty thousand inhabitants; and at the other, a second with its seven thousand; and destined, under the effect of the public works which are there to centre, and with the advantage of its noble harbor, to experience a rapid augmentation. The mutual intercourse of these cities—and yet more, that of the first mentioned with the country east of her as far as the Connecticut, which now is very limited, must, as a result of your construction, grow to much activity.

As a route to Boston, your work sustains a most favorable position, in point of directness and expedition. By means of its connections with other roads leading to the metropolis, it will be found to offer a passage as convenient and desirable, at least, as any other; and even the travellers who may pass from New York to that place on the more western thoroughfares will doubtless prefer, in a great number of instances, to return by this.

But a consideration, the most important of any, remains to be adduced. By your connections at New London, you became essentially an extension, and an integral part of both the Willimantic and the Norwich and Worcester railroads—thus spreading your arms to all that part of the state east of the Connecticut; whose outlet and inlet to and from New York, you necessarily become—and the same for a part of Massachusetts also. Indeed that a similar expectation may be entertained in relation to Rhode Island, in addition, a glance at any map which has upon it a tracing of the existing railroad lines, will go far to evince; for it can scarcely be doubted that an extension of the Stonington road to New London, will be immediately consequent upon the opening of yours.

Situation Wanted,

AS an Engineer on a Canal or Railroad, by a gentleman from Germany, who is familiar with the English and French languages, and who has for seven years been engaged in the study and practice of Engineering and the Superintendence of Public Works. Address

LEWIS BURYER,
2:26 64 Avenue B, New York.

ENGINEERS.

Arrowsmith, A. T.,
Buckfield Branch Railroad, Buckfield, Me.

Bancks, C. W.,
Engineer's Office, Southern Railroad, Jackson, Miss.

Berrien, John M.,
Michigan Central Railroad, Marshall, Mich.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Fisk, Charles B.,
Cumberland and Ohio Canal, Washington, D. C.

Felton, S. M.,
Fitchburgh Railroad, Boston, Mass.

Floyd-Jones, Charles,
New York and Harlem Railroad Extension, Lithgow, Dutchess Co., N. Y.

Ford, James K.,
New York.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

Harry, P.,
Binghamton, New York.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Higgins, B.
Mansfield and Sandusky Railroad, Sandusky City, O.

Johnson, Edwin F.
New York and Boston Railroad, Middletown Ct.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Worcester and Nashua Railroad, Worcester, Mass.

Morton, A. C.,
Atlantic and St. Lawrence Railroad, Portland, Me.

McRae, John,
South Carolina Railroad, Charleston, S. C.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Reynolds, L. O.,
Central Railroad, Savannah, Ga.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Robinson, James P.,
Androscggin & Kennebec Railroad, Waterville, Me.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Stark, George.,
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

Steele, J. Dutton,
Pottstown, Pa.

Trimble, Isaac R.,
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Thomson, J. Edgar.,
Pennsylvania (Central) Railroad, Philadelphia.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

Williams, E. P.,
Auburn and Schenectady Railroad, Auburn, N. Y.

Williams, Charles H.,
Milwaukie, Wisconsin.

BUSINESS CARDS.

To Railroad & Navigation Cos.

Mr. M. Butt Hewson, *Civil Engineer*, offers his services to Companies about to carry out the surveys on works of a line of Navigation or Railroad. He can give satisfactory references in New York City as to his professional qualifications; and will therefore merely refer here to the fact of his having been engaged for upwards of two years conducting important Public Works for the British Government.

Communications will find Mr. Hewson at the office of the Railroad Journal, 54 Wall Street, New York.

J. T. Hodge,
EAGLE RIVER P. O., LAKE SUPERIOR.

James Laurie, *Civil Engineer*,
No. 23 Railroad Exchange, Boston, Mass.

Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.

October 14, 1848. 6m*

James Herron, *Civil Engineer*,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Cruse & Burke,
Civil Engineers, Architects and Surveyors,
Office, New York State Institution of Civil Engineers,
STATE HALL, ALBANY., N. Y.

Drawings, specifications and surveys accurately executed. Pupils instructed theoretically and practically at a moderate premium.

May 26, 1849.

To Railroad Companies.
—WROUGHT IRON WHEELS—
SAFETY AND ECONOMY.
NORRIS' LOCOMOTIVE WORKS,
SCHENECTADY, NEW YORK,

Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address E. S. NORRIS.

May 16, 1849.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED' —'Potomac' and other good brands of Pig Iron.

IRON.

THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to J. F. MACKIE,
Nos. 85 and 87 Broad St.

New York, June 8, 1849.

Railroad Iron.

OF approved T patterns, weighing 56 to 60 lbs. per lineal yard, made by the best English manufacturers, and under our own specification and inspection. In store and to arrive. For sale by
DAVIS, BROOKS, & CO.,
68 Broad street.

New York, June 1, 1849. tf

☞ The above will favorably compare with any other rails.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

Monument Foundry.
A. & W. DENMEAD & SON,
Corner of North and Monument Sts.,—Baltimore,
HAVING THEIR
IRON FOUNDRY AND MACHINE SHOP
In complete operation, are prepared to execute faithfully and promptly, orders for
Locomotive or Stationary Steam Engines,
Woolen, Cotton, Flour, Rice, Sugar Grist, or Saw Mills,
Slide, Hand or Chuck Lathes,
Machinery for cutting all kinds of Gearing.
Hydraulic, Tobacco and other Presses,
Car and Locomotive patent Ring Wheels, warranted,
Bridge and Mill Castings of every description,
Gas and Water Pipes of all sizes, warranted,
Railroad Wheels with best faggotted axle, furnished and fitted up for use, complete

☞Being provided with Heavy Lathes for Boring and Turning Screws, Cylinders, etc., we can furnish them of any pitch, length or pattern.

☞ Old Machinery Renewed or Sepaired—and Estimates for Work in any part of the United States furnished at short notice.

June 8, 1849.

Iron.

THE Works of the New Jersey Iron Company at Boonton, N. J., having been recently enlarged and put in good repair, the company are prepared to receive orders for Iron, which will be executed with dispatch; and they warrant their iron equal in quality and finish to any in this country.

⅜ Round and square, to 6 inches.
⅛ Flat 4 "
Ovals, half-ovals and half-round.
Hoop, band and scroll iron.
Nail plates, superior charcoal Horse shoe,
Iron, sheet and Boiler iron,
Tire iron for locomotives,
Railroad spikes,
Pig iron of superior quality for chilling,
do, for foundry purposes,

For sale by JOHN F. MACKIE,
85 & 87 Broad Street,
Sole agent for the New Jersey Iron Co,

June 9, 1849.

WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,
PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.
German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS,
91 John street, New York.
Also by their Agents—
Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

100 Tons 2½ x ½, | 30 Tons Railroad.

All fit to re-lay. For sale cheap by
PETTEE & MANN,
228 South St., New York.

May 16, 1849. *

MANUFACTURE OF PATENT WIRE ROPE and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers, etc, by
JOHN A. ROEBLING, *Civil Engineer*,
Pittsburgh, Pa.

These *Ropes* are now in successful operation on the planes of the Portage railroad in Pennsylvania, on the Public Slips, on Ferries, and in Mines. The first rope put upon Plane No. 3, Portage railroad, has now run four seasons, and is still in good condition.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES. — The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.
JOHN F. WINSLOW, *Agent*.
Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Bro. Ler, Baltimore, Md

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-2 TO 8 INCHES DIAMETER.

These are the ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers
THOMAS PROSSER,
Patentee.
28 Platt street, New York.

SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.—The subscriber is engaged in manufacturing spring steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, *Agent*,
Albany Iron and Nail Works.

Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by
A. WRIGHT & NEPHEW,
Vine Street Wharf, Philadelphia.

Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TIRES imported to order, and constantly on hand, by
A. & G. RALSTON,
4 South Front St., Philadelphia.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron. THOMAS B. SANDS & CO.,
22 South William street,
February 3, 1849. New York.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*
Troy, N.Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N.Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.
November 6, 1848.

Railroad Iron, Pig Iron, &c.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ⅝ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartsherrie.
100 Tons Welsh Forge Pigs.
For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia.*

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phœnix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehannah river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.
REEVES, BUCK & CO.,
45 North Water St., Philadelphia.
March 15, 1849.

Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.

They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms. ILLIUS & MAKIN.
41 Broad street.
March 29, 1849. 3m.13

Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to
COOPER & HEWITT, *Agents.*
17 Burling Slip, New York.
October 30, 1848.

Iron Wire.

REFINED IRON WIRE OF ALL KINDS, Card, Reed, Cotton-flyer, Annealed, Broom, Buckle, and Spring Wire. Also all kinds of Round, Flat or Oval Wire, best adapted to various machine purposes, annealed and tempered, straightened and cut any length, manufactured and sold by
ICHABOD WASHBURN.
Worcester, Mass., May 25, 1849.

American and Foreign Iron.

FOR SALE,

300	Tons	A 1,	Iron Dale	Foundry Iron.
100	"	1,	"	"
100	"	2,	"	"
100	"	"	Forge	"
400	"	Wilkesbarre	"	"
100	"	"Roaring Run"	Foundry	Iron.
300	"	Fort	"	"
50	"	Catoctin	"	"
250	"	Chikiswalungo	"	"
50	"	"Columbia" "chilling" iron, a very superior article for car wheels.		
75	"	"Columbia" refined boiler blooms.		
30	"	1 x ¼ Slit iron.		
50	"	Best Penna. boiler iron.		
50	"	"Puddled" "		
50	"	Bagnall & Sons refined bar iron.		
50	"	Common bar iron.		

Locomotive and other boiler iron furnished to order.
GOODHUE & CO.,
64 South street
New York.

American Pig, Bloom and Boiler Iron.

HENRY THOMPSON & SON,
No 57 South Gay St., Baltimore, Md.,

Offer for sale, *Hot Blast* Charcoal *Pig Iron* made at the *Catoctin* (Maryland), and *Taylor* (Virginia), *Furnaces; Cold Blast* Charcoal Pig Iron from the *Cloverdale* and *Catawba*, Va., Furnaces, suitable for *Wheels* or *Machinery* requiring *extra* strength; also *Boiler* and *Flue Iron* from the mills of Edge & Hilles in Delaware, and *best quality Boiler Blooms* made from *Cold Blast Pig Iron* at the *Shenandoah Works*, Va. The productions of the above establishments can always be had at the lowest market prices for approved paper.

American Pig Iron of other brands, and *Rolled* and *Hammered Bar Iron* furnished at lowest prices. Agents for *Watson's Perth Amboy Fire Bricks*, and Rich & Cos. New York Salamander Iron Chests.
Baltimore, June 14, 1849. 6 mos

Roman Cement,

OF the best quality, now landing from ship Hendrick Hudson, from London, made by Billingsley, Mial & Co., and superior to anything of the kind manufactured in England. For sale by G. T. SNOW,
109 Water Street, New York.

LAWRENCE'S ROSENDALE HYDRAULIC Cement. This Cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms, and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front-street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscriber, Inventor and Patentee. G. A. NICOLLS,
Reading, Pa.

PHILADELPHIA CAR MANUFACTORY,

CORNER SCHUYLKILL 2D AND HAMILTON STS.,
SPRING GARDEN, PHILADELPHIA CO., PA.

Kimball & Gorton,

Having recently constructed the above works, are prepared to construct at short notice all kinds of

RAILROAD CARS, Viz:

Passenger Cars of all classes—Open and Covered Freight and Express Cars—Coal Cars—Hand Cars & Trucks of all descriptions.

They are also prepared to furnish Chilled Wheels of any pattern. Car Wheels & Axles fitted and furnished. Snow Ploughs and Tenders made to order. Steel and other Springs always on hand.

All orders will be filled at short notice, and upon as good terms as at any other establishment in the country.

Omnibuses from the Exchange run within one square of the manufactory every 10 minutes during the day.
Philadelphia, June 16, 1849. 1y25

Contract for building an Electric Telegraph from Halifax and onwards, in the Province of Nova Scotia.

Sealed Tenders will be received until the 30th day of June next, for building a Line of Electric Telegraph, starting from the city of Halifax—following the public road on the western side of Bedford Basin, thence from the head of the Basin to the Eastern Post Road from Halifax to Truro, and from Truro to the northwest boundary of Nova Scotia, passing through the village of Amherst—following generally the line of the post road, or such other line near thereto, as may be hereafter directed by the commisioners.

The line will be built forty posts to the mile—said posts to be Hacmatac or Cedar, 25 feet in length, 6 inches in diameter at the top, stripped of bark, as nearly straight as the natural growth will permit, and each post to be set five feet in the ground, either in firm earth of sand or gravel, and strongly embedded. Where rock occurs, they are to be firmly secured by means of foot bands and braces, or by a wall of stone well laid, not less than five feet in height, wedging towards the poles; and where soft, or wet earth or clay is found, the hole shall be enlarged sufficiently, and the earth replaced with stone, so as to prevent equally the poles from being disturbed or driven from the perpendicular by the action of violent winds, or their upheaving in soft and wet soil by the frost.

Where the Line passes through forests, dead trees and all other trees, which, by falling, may touch the wires, to be cut down at the expense of the Contractor—the object being to prevent the working of the line being affected by wind falls.

The line is to be constructed with a single line of wire, of the best quality, number nine, and weighing not less than 330 lbs. to the mile—each wire to be firmly connected with, and yet *insulated* from, the top of the posts, by the Patent Insulator—of which a pattern may be seen by applying at the office of the Provincial Secretary. It consists of a cast iron shaft, with teeth cup and cover, glass ball, with bolt and shoulders, and nuts and screws at each end to secure the wire firmly to the glass ball. The glass ball to be cemented in the cast iron cup, with a non-conducting cement, by a lining of some non-conducting substance between the bolthead and the cover, so as to secure a perfect *insulation*, and to protect the glass from fracture and other damage.

The party contracting will be required to furnish the necessary Registers, Batteries, and magnets, of the latest and best quality, of Morse's Patent, for not less than three stations—their different sites to be hereafter appointed by the commissioners.

The whole line will be required to be completed in good working order, and ready to be delivered to the commissioners or their agents, fit for immediate use, on or before the first day of October next.

The Tenders will not include the cost of the poles—the commissioners having already arranged by contract for a sufficient number of these to build the whole line; and these will be laid down in such quantities and sites as may be required.

Ample and satisfactory security will be required for the due and faithful performance of the work, as above stipulated.

JOSEPH HOWE,
GEORGE R. YOUNG,
W. MURDOCK
A. G. ARCHIBALD,
THOMAS LOGAN,
} Commissioners.

Halifax, May, 1849. 3t25

Large Wooden Pumps.

SEVERAL Large Wooden Square Pumps, of various sizes from 6 to 24 inches, and lengths from 10 to 25 feet, strongly bolted and strapped together with wrought iron; and used to great advantage on the Boston Water works; also two screw pumps each 25 feet long and 2½ feet in diameter, are now for sale by the Boston Water Commissioners.

For further particulars inquire at No. 119 Washington Street, Boston, or of E. S. CHESBROUGH, West Newton.

June 8, 1849.

P. S. DEVLAN & CO's Patent Lubricating Oil.

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office. KENNEDY & GELSTON,

5½ Pine street, New York,

Sole Agents for the New England States and State of New York. 1y14

TO RAILROAD COMPANIES AND MANUfacturers of Railroad Machinery. The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,

s45 N. E. cor. 12th and Market sts., Philad., Pa.

To Railroad Companies and Contractors.

FOR SALE.—Two Locomotive Engines and Tenders, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address JAMES ROWLAND,

Prest. Beaver Meadow Railroad & Coal Co., Philadelphia.

or, L. CHAMBERLAIN, Sec'y, at Beaver Meadow, Pa.

May 19, 1849. 20tf

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose* from 1 to 12 inches diameter. Suction Hose. *Steam Packing*—from 1-16 to 2 in. thick. *Rubber and Gutta Percha Bands.* These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street.

New York, May 21, 1849.

Text Book of Mechanical Drawing,

FOR the use of SCHOOLS and SELF-INSTRUCTION, containing,

1st. A series of progressive practical problems in Geometry, with full explanations, couched in plain and simple terms; showing also the construction of the *parallel ruler, plane scales* and *protractor.*

2d. Examples for drawing *plans, sections* and *elevations* of Buildings and Machinery, the mode of drawing elevations from *circular* and *polygonal* plans, and the drawing of Roman and Grecian Mouldings.

3d. An introduction to *Isometrical drawing*, with 4 plates of examples.

4th. A treatise on *Linear Perspective*, with numerous examples and full explanations, rendering the study of the art easy and agreeable.

5th. Examples for the projection of shadows.

The whole illustrated with 50 STEEL PLATES.

Published by WM. MINIFIE & CO.,

114 Baltimore St., Baltimore, Md.

Price $3, to be had of all the principal booksellers.

Large Pumps.

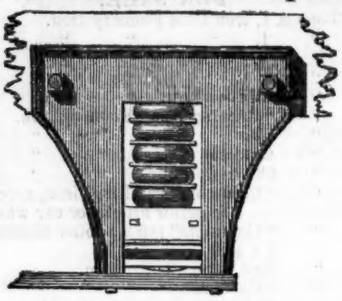
THE Boston Water Commissioners offer for sale a large number and variety of Wooden Square Pumps, used in clearing excavations from water during the construction of the Aqueducts.

Also Two Large Screw Pumps, each 25 feet long and 2½ feet in diameter.

For further particulars, enquire at the office of the Water Commissioners, 119 Washington St., Boston, or of E. S. Chesbrough, West Newton.

May 19, 1849. 6w20

Patent India-rubber Springs.



FULLER & CO. beg that parties interested in the use of these Springs will not be misled by exparte statements, but will examine the actual Patents and judge for themselves.

The statements made by Messrs. Crane & Ray shall be treated seriatim.

They claim to have first introduced India-rubber Springs about two years since, whereas they were used by Fuller & Co. nearly four yeas ago.

They claim the exclusive right to use Sprngs. They have no right whatever; every spring they make is an infringement upon Fuller's patent, dated 1845. They claim the sole right to make India rubber, and apparently think because a species of India-rubber was patented some years since, that no person can make any other now. A patent was *granted in January last* to Messrs. Tyer & Helm for a new and improved kind of Vulcanized rubber which is used by Fuller & Co.

Fuller's springs it is needless to say are in very general use, although Messrs. Crane & Ray pretend that they know of only one or two instances. Fuller & Co. guarantee all parties who use their springs.

As to the Legal proceedings—an action has been commenced against one company for an alleged infringement of Goodyear's patent, but is being defended with every prospect of success. An action has also been commenced by Fuller & Co., against parties for an infringement of Fuller's patent, and *this will be done in every case of violation.*

In every case in which Fuller's spring has been applied, it has been pronounced superior to that made by Mr. Ray, and this fact induces Messrs. Crane & Ray to claim the right of using it. They attempt to lead the public from the real question at issue, by producing a Deposition as to Mr. Ray having *tried to make* a spring which Mr. Fuller *did make* and patent. If Mr. Ray did invent a spring in 1844, why did he not apply for a patent, and not wait until 1848, when his application was rejected!

Mr. Knevitt has never stated that the springs were put on by him, which are refered to in Mr. Hale's article, but he does state that those springs are made according to Mr. Fuller's specification, and consequently are an infringement upon it. The article of Mr. Hale in the Boston Advertiser, quoted by Messrs Crane & Ray, was followed immediately by a letter in the same paper, from Mr. Knevitt, setting forth the facts of the case.

The springs refered to were put on by Mr. Ray before Mr. Knevitt came to the United States; when he arrived he gave Mr. Ray notice not to proceed further in making or vending such springs; Mr. Ray then said he did not wish to infringe, and would not continue to do so, and he then contrived an India-rubber and Air spring which totally failed.

In the selection of their first agent, Fuller & Co. were particularly unfortunate, and their reason for adverting to it is simply that it may tend to throw light on subsequent transactions, and furnish a reply to the remark, "that this opposition was invited by their own delay in getting the thing to work." The individual refered to undertook the agency for Fuller's springs, and left Liverpool on the 1st January, 1847, furnished with a complete set of drawings, models, etc., and every necessary instruction to make arrangements respecting the supply of material, and to have it at work within the time limited by law; but *from that hour to the present, not a single communication has been received from the said agent.* Some of their models, however, they have traced into the hands of parties now seeking to invade their rights, and by whom they understand they have been exhibited as specimens of their own invention.

The superiority of Fuller's spring is implied in the offer of the New England Car Co. to make springs upon his principle (now that a preference is given to the disc and plate form) and this notwithstanding the fact, that Fuller & Co. have a patent, and that Mr. Ray's application for one was rejected. The public can judge which company's course has been the most honorable, or whose statements are entitled to consideration.

Fuller's springs can be obtained of *Mr. Knevitt* the Agent, at 38 Broadway New York, and of *Messrs. James Lee & Co.*, 18 India Wharf, Boston.

May 26, 1849.

To Contractors.

OHIO AND PENNSYLVANIA RAILROAD.

Proposals will be received at the office of the Ohio and Pennsylvania railroad Co., in the city of Pittsburgh, until SATURDAY, the 30th of JUNE, 1849, for the Grading and Bridging of the Railroad from the mouth of Big Beaver to the State line of Ohio, a distance of about twenty miles. Drawings and specifications of the work to be let may be seen at the office in Pittsburg, during the week before the letting, on application to Solomon W. Roberts, Chief Engineer; and information may be obtained at any time at the office of Edward Warner, Resident Engineer of the Eastern Division, New Brighton, Beaver county, Pa. The work is well worthy of the attention of experienced and energetic contractors, and the line passes through a fertile country, and is easy of access at all points.

By order of the Board of Directors.

WM. ROBINSON, Jr., President.

Pittsburgh, May 21, 1849.

Extension of the Baltimore & Ohio Railroad.

TO CONTRACTORS FOR GRADUATION AND MASONRY.

PROPOSALS are invited for the graduation and masonry of about 25 miles more of this road, beginning at a point some 64 miles west of Cumberland, and ending at a point about 13 miles west of Cheat river, embracing all the sections from No. 64 to No. 88, both inclusive. The graduation on nearly all of these sections will be heavy, and will include one Tunnel of considerable length and three short ones. There will be also two Viaducts of medium size.

Specifications and plans of the work will be ready for distribution to proposers by the 13th of June, prox., at the Company's office in Cumberland. The proposals will be addressed to the undersigned, and will be received up to Saturday, July 7th, inclusive, at the same place. Proposers are earnestly requested to examine the line closely before bidding, and to avail themselves of the ample means of information of the value of the work, which will be furnished them, as contractors from a distance, accustomed to more difficult excavations than those to be met with on this line, will otherwise be likely to make their estimates too high. The best testimonials will be required, and an energetic prosecution of the work will be necessary. The payments will be cash, with the usual reservation of one-fifth till the completion of the contract. By order of the President and Directors. BENJ. H. LATROBE,

Baltimore, May 31, 1849. Chief Engineer.

C. W, Bently & Co.,

PORTABLE Steam Engine and Boiler Manufacturers, East Falls Avenue, near Pratt St. Bridge, BALTIMORE, MARYLAND.

Their Engines are simple in their construction, compact and durable; they require no brick work in setting them, and occupyidg but a small space (a six horse power engine and boiler, standing on a cast iron plate of three by six feet.)

They also manufacture Major W. P. Williamson's new oscillating Engine; a superior article, combining cheapness and simplicity (one of which may be seen in operation at their shop.) Both of these engines are adapted to any purpose where power is required, and may be made of any capacity; and for economy in use of fuel are unsurpassed.

All kinds of machinery made to order. Steam Generators, Force Pumps, Wrought Iron Pipes and Fillings for Steam, Water, Gas, etc., constantly on hand,

Baltimore, June 6, 1849.

BLAKE'S PATENT FIRE & WEATHER-PROOF PAINT, OR ARTIFICIAL SLATE.

This extraordinary substance is found in a stratum of rock in Sharon, near Akron, Ohio; when taken from the mine it has all the appearance of the finest Indigo, and is no harder than cold tallow; but exposure a few days to the atmosphere turns it to hard *slate* or *stone;* it is reduced to a fine powder, mixed with Linseed Oil to the consistency of thick paint, and applied with a brush, and after an exposure a few months to the atmosphere, this coating becomes a perfect *slate*, protecting whatever covered, from the action of the weather and from fire. It has been found upon analization by Dr. CHILTON, of the city of New York, to consist of larger proportions of Silica, Alumina, and Black Oxide of Iron and Magnesia, with lesser of Lime and Carbon; the transition therefore [according to the opinion of Drs. Chilton and Locke] from the liquid *paint* to the hard *slate* is accounted for according to nature's own laws, as the oil absorbs and evaporates by the action of the atmosphere, the powerful adhesive attraction incident to the Black Oxide of Iron, binds and attracts not only the particles together, but too the substance covered, so that the longer on, the more powerful the attraction, consequently the harder the *slate*, and the closer it will adhere to the substance applied; and as it contains a large amount of Alumina and Magnesia, two of the best non-conductors of heat that we have, consequently the coating [after it turns to slate] is indestructable by fire, therefore it protects the wood from the air, and where there is no air there is no blaze or combustion, the wood therefore will *char* before the coating will give way. It is being used extensively for covering roofs of either shingles, matched boards, tin, zinc, sheet iron, or thick paper; if your shingles have been on for years you have only to sweep off the moss and lint with a stiff broom and cover with two or three good coats and in a few months you have a perfect *slate roof* impervious to the action of *weather* and *fire*.—There is nothing equal to it for Steamboat and Car decks, for all kinds of iron, as it forms a coating nearly as hard as the iron itself and never cleaves off.

It is used upon brick walls both as a paint and cement, it forms a perfect *stone* coating, through which not a particle of moisture can pass; in fact, it is used upon anything you wish to protect from *fire* or *weather*.

The Government has granted a patent to me for the discovvery of its application as a fire and weather-proof composition, or artificial slate.

The Fair of the American Institute, held last fall, awarded me a Medal, and the Fair of the State of New York a Diploma. The examining committee of the American Institute, of whom Dr. J. R. Chilton was chairman, and had some three years previous analysed it, states in the report, that it was an article superior to anything that had been presented as a weather and fire proof covering.

I would call the attention of the public to a discovery I made about three years since of an article similar to my black pigment, but instead of its being colored with the black oxide of iron, it is colored with the *red*, giving to the substance a beautiful Chocolate, the fashionable color of the day, for sides of buildings. It does not become quite as hard as the black, consequently is not quite so good for roofs, but is preferred on account of color for sides. I have a large quantity of this now prepared for market and can supply all demands.

LOOK-OUT FOR FRAUD.

For the last few months there have been scores of individuals engaged in digging, grinding and sending to a distance all kinds of stuff, much of it no better than *dirt* from the street or *clay* from any bank, calling it all good *fire* and *weather* proof *paint*, like mine they say, but of a different color. Now it is impossible for them to know anything of the weather proof qualities of this article, as it has not yet been a year since they first commenced digging it, and according to the opinion of Dr. Chilton, of New York., and Dr. Locke, of Cincinnati, this stuff is entirely worthless, as an outside coating, as it has neither the *red* or the *black* oxide of iron in it, consequently there can be no cohesive attraction; therefore, as the action of the atmosphere destroys the oil with which it is applied, it will wash or rub off like chalk or whiting.

Others are mixing enough of mine to give it the color, and selling it as mine. Others are engaged in digging, grinding and offering for sale precisely the same article I have patented, contending that they have a right to sell it in its powdered state, and that those who buy and mix with the oil to make the compound, must take the responsibility of the infringement of the patent.

I therefore will give *notice* to all, that I have instructed my agents throughout the country, to take the *name* and *residence* of every individual who shall buy and mix with oil and use this compound [except from me or my authorised agents] that I shall hold them to a strict accountability, and shall call upon all such to settle with and pay me for thus infringing upon my patent, and in case they refuse I shall commence suits at law against them.

Some of those engaged in this nefarious traffic in order to push their article into market, contend that my patent will not stand; that the substance was known and used for years previous; and a statement to that effect was got up and published by Thomas Caldwell, and signed by several individuals, every one of whom [so far as I know them] was either in the business or preparing to go into it. Now I will not bandy words with a set of men who have not *moral honesty* sufficient to deter them from *stealing*, and appropriating to their own use the inventions and discoveries of others, but will insert a statement of all the officers of the township of Sharon, who have no interest further than to state the truth; the which statement, coming as it does from such a source, must be sufficient to convince any unprejudiced mind of the falsity of their position.

We, the officers of the township of Shanon, will state that we do not believe there ever was a Patent more *honestly* or *laboriously* earned, or more *deservedly* granted than the one granted to Mr. Blake for a weather and fire-proof composition or artificial slate, as he pursued his experiments with the most indomitable perseverance, under very discouraging circumstances, as the public had not the least confidence that there could be anything valuable made from the substance. He therefore had to encounter, for years, the *jeers* and *scoffs* and ridicule of nearly the whole community; and we do not believe that there is one man in a thousand who would have persevered under all the difficulties. But he has at last triumphed over all obstacles; and we believe there is now but one opinion in awarding to him the merit of this valuable discovery.

GEO. W. CRANE, HORACE GIBBS, JNO. EVERHARD, } Justices of Peace.
LEWIS C. CHATFIELD, R. W. MILLS, BFNJ. JONES, } Trustees of Township.
WM. F. EVERETT, Township Clerk.
ALLEN HOWFS, Treasurer.

How is it possible to know anything of the lasting qualities of this Counterfeit stuff? as it is not a year since the first was tried. The Public therefore to be safe should purchase from my Agents, and see that every Barrel is marked "Blake's Patent Fire-proof Paint."

This may certify that we have been acquainted with Blake's Patent Fire-proof Paint for some years, and are well assured that it is really what its name indicates —*fire-proof*. And we will here state to the public that buildings well covered with this paint will be taken at our several offices at lower rates of insurance than those covered with tin or zinc, as we consider it a better fire proof.

H. K. SMITH, Sec. Summit Mutual Fire Ins. Co.
DAN'L S. LEE, Agt. Medina Co. Mutual Ins. Co.
D. B. HADLEY, Agt. Stark Mutual Insurance Co.
Akron, March 5, 1849.

—

MR. BLAKE—Dear Sir: From the nature of my business, I have had my attention turned for several years to your "*Patent Fire-proof Paint*," and as a protection against fire to those buildings to which it is thoroughly applied I consider it preferable to *tin* or *zinc*.

R. F. CODDING, Agt. Portage & Farmer's
Copley, April 12, 1849. Insurance Co.

—

We, the undersigned, in our statement to Caldwell, had reference only the grinding or fineness of the different paints, and we will further state that [aside from BLAKE'S PATENT] we feel it a duty we owe to Mr. Blake to purchase of him, as no others had anything to do with Fire-proof Paint, until after Mr. B. by *years of experiments*, had discovered its value and introduced it to the public.

R. A. STINEHOUR, L. C. NOTT, S. J. MILLER, } Painters.
Akron, April 9, 1849.

—

MR. BLAKE—Dear Sir: I had a building adjoining the wall of my Stone Cotton Factory, the roof of which was covered with your Fre-proof Paint, or Artificial Slate. The factory took fire, and during the progress of its destruction, large numbers of burning shingles and other combustible materials fell upon this roof, so covered, and I expected every moment to see it burst into flames, but after the factory burned down I examed said roof and found it literally covered with coals and cinders, but the fire had not made the least impression upon it. After this test, there certainly can be no doubt as to its fire-proof qualities. SETH C. JONES.
Rochester, N.Y., Sept. 1848.

—

AMERICAN HOTEL,
Broadway, New York, Oct. 4, 1848.

MR. BLAKE—Dear Sir: We last Spring covered the roof of the American with your Fire-proof Paint. We now find that it has become as hard as slate, and the almost constant tread of the servants [who use the top of the house for drying clothes] does not affect it in the least, and it proves all that it was recommended.

TABER & BAGLEY.

We, the undersigned, inhabitants of Sharon, have for the last three years watched with much interest the trial of Blake's Metalic Fre-proof Paint found in this town, we have covered our houses with this fire-proof paint, and can now with confidence state to the public that it is an article of great value; that the sun, rain or frost has no other effect than to turn it to stone, so that we now have to all intents a perfect *Slate roof*, and so perfectly does it protect the roof from moisture that frequently several gallons of dew runs from the eaves in the morning; and where there is no moisture there is no decay, and the rain that falls from the roof is as pure and clear as the purest *Spring water*, and from the nature of the article it must be an excellent FIRE PROOF; we therefore can unite in recommending it to the public, and believe that no good building where shingles are used ought to be left *unslated*.

Wm. Chatfield, Joseph W. Crane, Wm. Ingham,
Adam Kooder, Thomas Rhodes.
Shanon, June 1, 1847. —

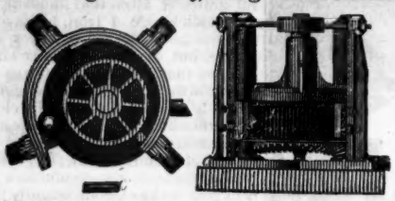
All Letters and Communications addressed to the Patentee, at No. 3 Broad street, near Wall, New York, or at Akron, Ohio, will meet with prompt attention.

WM. BLAKE,
Patentee of Fire-proof Paint.

DIRECTIONS. Mix the Powder with Linseed Oil to the consistency of Thick Pain, and apply two or three good coats with a common paint brush, being careful to keep the paint well stirred in the pot while putting on. 100 lbs. will cover the roof of a building 33 feet square, or 1,000 superficial feet.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phœnixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has give universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery *for making Spikes*, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, *Agent*,
Troy Iron and Nail Factory, Troy, N. Y.

RAILROAD WHEELS.

CHILLED RAILROAD WHEELS.—THE UNdersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

CHILLED RAILROAD WHEELS.—THE UNdersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money.

A. TIERS,
Point Pleasant Foundry.

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co., }
March 12, 1848. }

ENGINE AND CAR WORKS.

DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

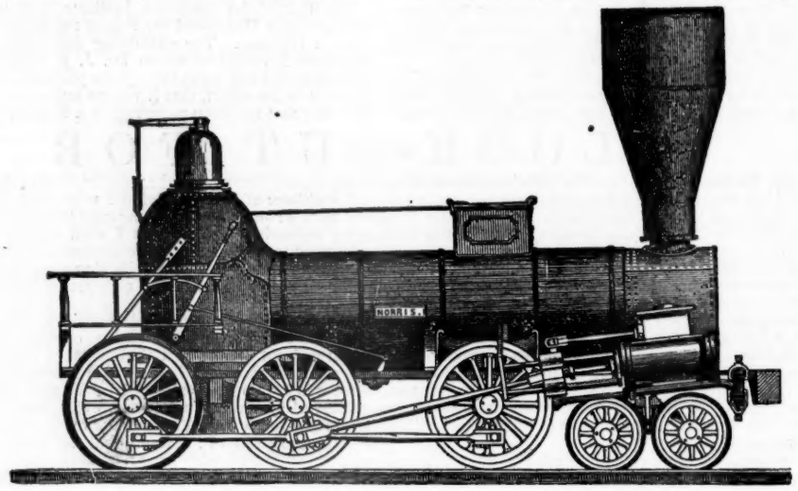
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds —including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufactory in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

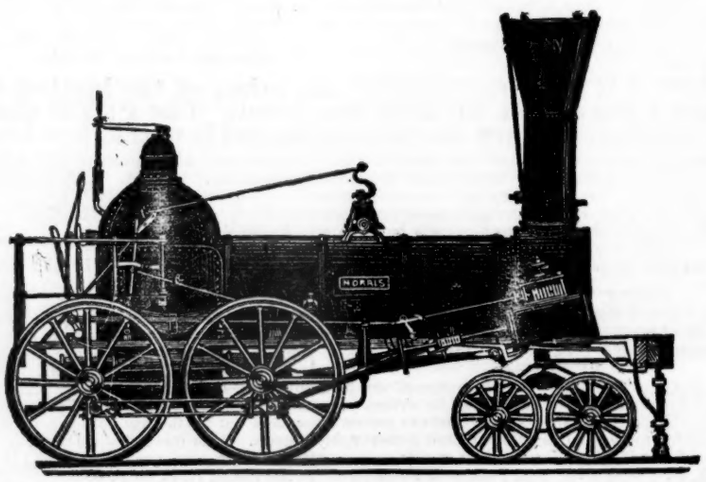
DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tires are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern–also *Tenders, Wheels, Axles,* and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC.,
Of any required size or pattern, arranged for driving *Cotton, Woollen, or other Mills,* can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY,
Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,
Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.
Turning Lathes, Slabbing, Plaining, Cutting and *Drilling Machines,* of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 39 Pine street, New York.

WM. B. LEONARD, *Agent.*

IRON BRIDGES, BRIDGE & ROOF BOLTS, etc. STARKS & PRUYN, of Albany, New York. having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. nave furnished several Iron Bridges for the Erie Canal, Albany Basin, etc. —and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds,	Canal Commissioners of the State of New York.
Willard Smith, Esq.,	Engineer of the Bridges for the Albany Basin.
Messrs. Stone & Harris,	Railroad Bridge Builders, Springfield, Mass.
Mr. Wm. Howe,	Engineer & Bridge Builder, Utica, N. Y.
Mr. S. Whipple,	

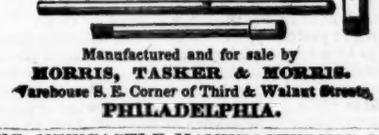
January 1, 1849.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit. fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER Flues.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

THE NEWCASTLE MANUFACTURING Co. continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steamboats. Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,
a45 President of the Newcastle Manuf. Co.

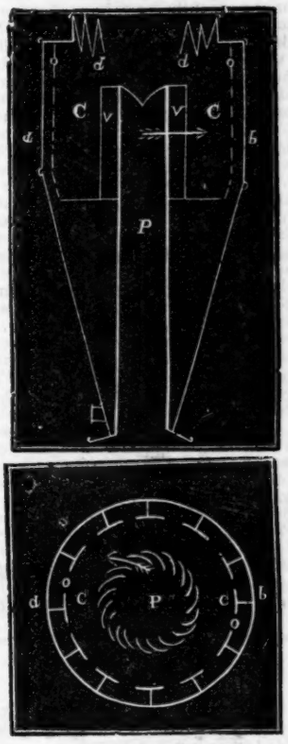
PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, *Agent,*
Troy Iron and Nail Factory, Troy, N. Y.

FRENCH & BAIRD'S Patent Spark Arrester.



TO THOSE INTERESTED IN RAILROADS. Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both Passenger and Freight Engines, and have been brought to such a state of perfection, that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust, they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unob structed passage, thus arresting the sparks without im pairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart. and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co; J. Elliott, sup't M. P., Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon, (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo.power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

Improvement for Lessening Friction on Railroads.

THE Improvement sometime since perfected for lessening the friction on rails, cars and engines, having been fairly tested, and found to possess all the advantages anticipated, is now presented to the notice of parties connected with railroad companies.

The article used is India-rubber, chemically combined with a metalic substance, in such a manner as to give it a remarkable degree of strength and durability, and the peculiar quality of not being affected by abrasion, or the extremes of either heat or cold.

The advantages derived from its application are briefly as follows:

1st, A sensible lessening of friction on the rails, and of wear and tear to the machinery of the locomotives and cars.

2d, A general benefit to the whole superstructure of the road, by the trains passing with an easier and less jarring action.

3d. A greater degree of comfort to the passengers, owing to the exemption from the usual loud and annoying rattling of the cars and engines.

4th, An increased speed to the trains, with the same power, arising from the uniform steadiness and decrease of friction to the rails, cars, etc.

And lastly, a material saving in the annual expenditure for repairs.

A drawing, illustrating the application of India-rubber to this purpose, will be found in the American Railroad Journal, under date of May 26, 1849.

The annexed certificate, among others in the hands of the patentee, will explain the nature of this improvement.

"J. ELNATHAN SMITH, Esq.,

Dear Sir: In relaying the New Orleans and Carrollton railroad, I applied Vulcanized India-rubber in the Chairs, under the *joints* of the rails, of 1-10 of an inch thick, with the happiest result. The road thus laid has been in constant daily use since August last, and I cannot perceive the least deterioration. The rubber acts admirably as a *wedge,* in the way I use it, as well as a perfect preventive of the battering down of the ends of the rails. It also makes the road unusually smooth —for in riding over it I have not been able to detect the joints; and I have had the assertion of several observers of such matters to the same effect. We are delighted with it here, and think it a very important simple, and cheap acquisition in the permanent maintenance of railroads.

The annexed sketch of the chair I use, will give an idea how the rubber acts as a wedge. They weigh 13 lbs. and are 7 inches square—are accurately cast to one size, and when in their places, ready for the rails, I place a piece of the rubber 1-10 of an inch thick thereon. The width of the base of the rail, and the length of the chair is 3½ by 7 inches. The rail is then forced in *sideways,* which, owing to there being but 1-16 of an inch space for 1-10 inch thickness of rubber, requires considerable pressure; consequently, the elasticity keeps the rail tight up to the clip of the chair A. I have closely observed the joints when the engine passed over them, but could not detect any depression of the rails separate from each other.

I find that the cost for the rubber will be about 7 cts. per *joint,* which for 21 feet rails, will be about $35 per mile, *exclusive of the patent right.*

The rubber I use is of excellent quality, and made in pieces of about 20 to 30 yards long, and 25 inches wide, (1-10 of inch thick,) and weighs about 4 lbs. to the yard in length. I cut 7 pieces in the width, consequently 7 inches in length makes 7 pieces or 7 yards, weighing about 28 lbs., will give 252 pieces, or half a mile of road with 21 feet rails. I am respectfully yours,

JOHN HAMPSON,
Eng. New Orleans and Carrollton Railroad."
New Orleans, March 14, 1849.

Orders received and full information by
J. ELNATHAN SMITH, Patentee,
22 John street,
New York, May 26, 1849.

Fuller's Patent India-Rubber Springs.

THERE *can now be no ground of opposition whatever to these Springs.* The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but *a Patent has just been granted for an entirely new species of India Rubber*, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed by alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring—nor is any spiral spring required. The Patentee is consequently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

The New England Car Company have *no* right to make an India-rubber Spring with a Bolt through the centre. All companies using such a spring are liable to an action.

Fuller's spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders.—Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of *Machines*.

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c. G. M. KNEVITT, Agent.

Principal office, No. 38 Broadway, New York.

Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston and Worcester Railroad, wrote an article concerning Fuller's Springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[*From the Boston Advertiser of the 7th June*].

INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad.—It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. *Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced into general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper.*"

F. M. Ray's Patent India-rubber Car Springs.

India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, *as will invariably be done in every case of such violation.*

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Fuller claims to be his invention, was invented by Mr. Ray in 1844.—In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

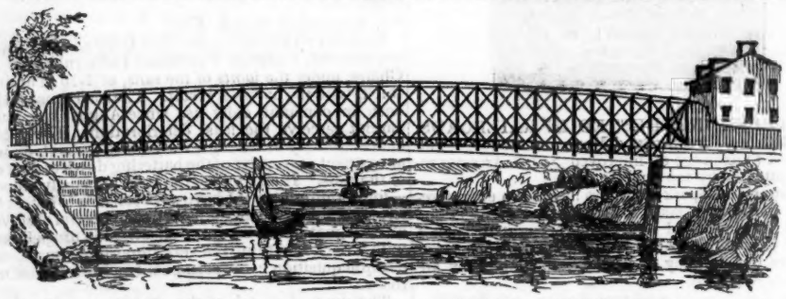
"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his retnrn said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of *Goodyear's Metallic Rubber*, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the *Arch, Suspension and Triangle*, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far *more economical* than the best wood structure, and on *certain conditions*, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, *up stairs*, or of W. RIDER & BROTHERS, 58 *Liberty Street*, where terms of contract will be made known, and where orders are solicited.

M. M. WHITE,
Agent for the Company.

November 25, 1848.

RAILROAD India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metalic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 98 Broadway, New York.
E. CRANE, 99 State Street, Boston.

May 24, 1849.

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.

JOB CUTLER, *Patentee.*

☞ These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

MR. HALE:—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Spaings upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, or arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanised India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most fo the other roads terminating in this city."

And yet Mr. Knevitt is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

Devlan's Machinery Oil.

THE Subscribers, Agents for P. S. Devlan & Co's "Patent Lubricating Oil"—price 80c. per gallon 4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Norris Brothers, in whose works, any one by calling can see the oil in use and judge for themselves.

NORRIS' LOCOMOTIVE WORKS.
Philadelphia, April 2, 1849.

We have been using throughout our Works, during the last six weeks, "Devlan's Lubricating Oil," and so far as we have been able to judge from its use, we think it preferable to the sperm oil generally used, for both heavy and light bearings. NORRIS, BROTHERS.

For sale by ALLEN & NEEDLES,
22 & 23 South Wharves,
14tf Philadelphia Pa.

Coal.

CUMBERLAND SEMI-BITUMINOUS COAL superior quality for Locomotives, for sale by
H. B. TEBBETTS,
No. 5½ Pine St., New York.
May 12, 1849. 1m19

RAILROADS.

NORWICH AND WORCESTER RAILROAD. Summer Arrangement.—1849.

Accommodation Trains daily (Sundays excepted.)

Leave Norwich at 5 am., and 5 pm.

Leave Worcester at 10½ am., and 4½ pm., connecting with the trains of the Boston and Worcester, Providence and Worcester, Worcester and Nashua and Western railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 18, North River.—At Boston from corner Beach and Albany streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ am., from Norwich at 9 am.

32 1y S. H. P. LEE, JR., Sup't.
May 20, 1849.

EASTERN RAILROAD, Spring and Summer Arrangement. On and after Thursday, March 15,'49,

Trains will leave Eastern Railroad Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 10, a.m., 12, 2½, 3, 4½, 5½, 7, p.m.
Salem, 7, 10, a.m., 12, 2½, 3, 4½, 5½, 7, p.m.
Manchester, 10, a.m., 3, 5½ p.m.
Gloucester, 10, a.m., 3, 5½ p.m.
Newburyport, 7, a.m., 2½, 4½, 7, p.m.
Portsmouth, 7, am., 2½, 4½, pm.
Portland, Me., 7, am., 2½, pm.

And for Boston,

From Portland, 7½, am., 3, pm.
Portsmouth, 7, 9½*, am., 5½*, pm.
Newburyport, 6, 7½, 10½*, am., 6*, pm.
Gloucester, 7, am., 2, 5½ pm.
Manchester, 7½, am., 2½, 5½ pm.,
Salem, 7, 8*, 9*, 10½, 11-40*, am., 2½, 6*, 7* pm.
Lynn, 7½, 8½*, 9½*, 10½, 11-55*, am., 3, 6½*, 7½*, pm.

**Or on their arrival from the East.*

MARBLEHEAD BRANCH.

Trains leave
Marblehead for Salem, 6½, 8½, 10½, 11-25, am. 2½, 4½, 5½, pm.
Salem for Marblehead, 7½, 9½, 10½, am., 12½, 3½, 5½, 6½, pm.

GLOUCESTER BRANCH.

Trains leave
Salem for Manchester at 10½, am., 3½, 6½ pm.
Salem for Gloucester at 10½, am., 3½, 6½, pm.
Trains leave
Gloucester for Salem at 7, am., 2, 5½ pm.
Manchester for Salem at 7½, am., 2½, 5½, pm.
Freight trains each way daily. Office 17 Merchants' Row, Boston.
Feb. 3. JOHN KINSMAN, Superintendent.

BOSTON AND MAINE RAILROAD.

Spring Arrangement, 1849.
Outward Trains from Boston

For Portland at 6½ am. and 2½ pm.
For Rochester at 6½ am., 2½ pm.
For Great Falls at 6½ am., 2½, 4½ pm.
For Haverhill at 6½ and 12 m., 2½, 4½ 6 pm.
For Lawrence at 6½, 9, am., 12 m., 2½, 4½, 6, 7½ pm.
For Reading 6½, 9 am., 12 m., 2½, 4½, 6, 7½, 9½* pm.

Inward trains for Boston

From Portland at 7½ am., 3 pm.
From Rochester at 9 am., 4½ pm.
From Great Falls at 6½, 9½ am., 4½ pm.
From Haverhill at 7, 8½ 11 am., 3, 6½ pm.
From Lawrence at 6, 7½, 8½, 11½, am., 1½, 3½, 7 pm.
From Reading at 6½, 7½, 9, am., 12 m., 2, 3½, 6, 7½ pm.

MEDFORD BRANCH TRAINS.

Leave Boston at 7, 9½ am., 12½, 2½, 5½, 6½, 9½* pm.
Leave Medford at 6½, 8, 10½ am., 2, 4, 5½, 6½, pm.

* On Thursdays, 2 hours; on Saturdays, 1 hour later. CHAS. MINOT, Super't.
Boston, March 27 1849.

BOSTON & LOWELL RAILROAD.

Passenger trains run as follows, viz:

Express Trains.

Leave Boston at 7½ a.m., 12 m. and 5 p.m.
Leave Lowell at 8 a.m., 12 m. and 4 55 p.m.—or on the arrival of the train from Nashua.

Accommodation Trains.

Leave Boston at 7 5 and 9½ a.m., 2½, 4½ & 6½ p.m.
Leave Lowell at 7 and 10 a.m., 2. 5 and 6 p.m.

Woburn Branch Trains.

Leave Woburn Centre at 6, 7, 9, 10 a.m., 1½ and 4½ p.m.
Leave Boston at 8, 11½ a.m., 3, 5½ and 7 p.m.
On Saturdays, the last train leaves at 8 instead of 7 p.m.
The trains from Boston at 7½ a.m., and 5 p.m., and from Lowell at 4 55 p.m., do not stop at Way Stations. The trains from Lowell at 8 a.m. and from Boston and Lowell at 12 m., stop at no way station except Woburn Watering Place, and there only for Upper Railroad Passengers.

WALDO HIGGINSON,
Agent Boston and Lowell Railroad Cor.
Boston March 5, 1849. 22tf.

ESSEX RAILROAD—SALEM to LAWRENCE, through Danvers, New Mills, North Danvers, Middleton, and North Andover.

On and after Thursday, March 15, trains leave daily (Sundays excepted,) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 8, am., 12.45, 3.45, 6.30, pm.
Salem for North Danvers at 8, am., 12.45, 3.45, pm.
Salem for Lawrence, 8, am., 3.45, pm.
" North Andover 8, am., 3.45, pm.
" Middleton 8, am., 3.45, pm.
South Danvers for Salem at 6.45, 10.15, am., 2·15, 5.45, pm.
North Danvers " 10, am., 2, 5.40, pm.
Middleton " 9 45, am., 5 15, pm.
North Andover " 9.20, am., 5.05, pm.
Lawrence " 9 15, am., 5, pm.

JOHN KINSMAN, Superintendent.
Salem, Oct. 2, 1848.

BOSTON AND PROVIDENCE RAILROAD. On and after MONDAY, APRIL 2d, the

Trains will run as follows:—

Steamboat Train—Leave Boston at 5 pm Leaves Providence on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 am., and 4 pm. Leave Providence at 8½, a.m., and 4, pm.

Dedham Trains—Leave Boston at 8½ am, 12 m., 3½, 6½, and 10½ pm. Leave Dedham at 7,9½, am., 2½, 5, and 8 pm.

Stoughton Trains—Leave Boston at 1 am., and 5½ pm. Leave Stoughton at 11½ am., and 3½ pm.

Freight Trains—Leave Boston at 11 am., and 6 pm. Leave Providence at 4 am., and 7.40 am.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 am., 12 m., 3, 5½, and 10½ pm. Leave Dedham at 8, 10½, am., 1½, 4½, and 9 pm.

WM. RAYMOND LEE, Sup't.

FITCHBURG RAILROAD.—On and after Monday, April 23d, 1849, Trains will run as follows:

Express Train.

Leaves Boston at 7½ a.m.; Fitchburgh at 3 55 p.m. or upon arrival of the trains from the upper roads.

Accommodation Up Trains.

For Groton, West Townsend and Fitchburg, 6 50 and 11 a.m. and 3 40 p.m.
Concord, 6 50 and 11 a.m., 3 40 and 7 p.m.
Waltham, 6 50, 7 35, 10 and 11 a.m., 1 45, 3 25, 3 40 and 7 p.m.
Fresh Pond, Mount Auburn and Watertown, 9 a.m., 12 m. and 2 20 and 7 15 p.m.
West Cambridge and Lexington, 9 30 a.m., 2 30 and 6 30 p.m.

Down Trains.

From Fitchburg, 7 50, 11 55 a.m. and 4 40 p.m.
West Townsend, 7 30, 11 55 a.m. and 4 40 p.m.
Groton, 8 20 a.m., 12 30 and 5 15 p.m.
Concord, 6 25 and 9 a.m., 1 10 and 5 55 p.m.
Waltham, 6 50, 8 15, 9 25 and 11 a.m, 1 35, 2 35, 4 30 and 6 20 p.m.
West Cambridge and Lexington, 7 and 11 15 a.m and 4 45 p.m.
Fresh Pond, Mount Auburn and Watertown, 7 15 and 10 a.m., 1 30 and 4 30 p.m.
The 6 50 a.m. up train will not stop at Stony Brook, Lincoln and Lunenburg.
The 11 a.m. up train will not stop at Weston and West Acton.
The 3 40 pm. up train will not stop at Charlestown Porters, West Cambridge and Lunenburg.
The morning train down will not stop at Lunenburg and Lincoln.
The evening train down will not stop at Lunenburg and Stony Brook.

S. M. FELTON, Superintendent.
Bostor., April 21, 1849. 22tf

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

NEW YORK AND ERIE RAILROAD. EXTENDED TO OWEGO.

On and after the 1st June, the trains will run as follows, daily, excepting Sundays: For Passngers—Through trains will leave New York for Owego e by steamboat, from the Duane-st. pier, at 7½ o'clock, A.M. and 5 o'clock, P.M. stopping at Ramapo Station, Chester, Goshen, Middletown, Otisville, Port Jervis and all the way stations west of the last-named place; and will leave Owego on and after the 4th June, at 6 A.M. and 7 P.M.; and Binghamton, on and after the 1st June, at 7 A.M. and 8 P.M. arriving in New York at 7½ P.M. and 8½ A.M. stopping at all the way stations between Owego and Port Jervis; and, east of Port Jervis, at Otisville, Middletown, Goshen, Chester, Ramapo Station and Spring Valley. Way Trains for Port Jervis and all the intermediate stations, will leave New York, by steamboat Thomas Powell, from Duane-st. pier, at 7½ A.M. and 4 P.M.; and will leave Port Jervis at 6 A.M. and 4 P.M. Milk Trains—A train leaves Otisville at 5½ A.M. arriving in New York about 11. The afternoon milk is taken by the train leaving Port Jervis at 4 o'clock P.M. and arriving in New York about midnight. Freight—Freight leaves New York every night for all the regular stations on the road. A freight train will leave Owego every morning at 6 o'clock; and another will leave Port Jervis, as usual, every morning at 8 o'clock, with market freight, &c. JAS P. KIRKWOOD,

May 30, 1849. Superintendent.

NEW YORK & HARLEM RAILROAD, DAILY. WINTER ARRANGEMENT.

ON and after December 1st, 1848, the Cars will run

as follows, until further notice:—

Trains will leave the City Hall, New York, for Harlem and Morrisiana at 7, 9, 9.30, 11, am. 12 m., 2, 4, 4.15, 5.30, pm.

Trains will leave the City Hall, New York, for Fordham and Williams' Bridge, at 7 30 and 9 30 am., 12 m., 2, 4 15, 5 30 pm.

Trains will leave the City Hall, New York, for Hunt's Bridge, Underhill's and Hart's Corners, at 9 30 am., 4 15 pm.

Trains will leave the City Hall, New York, for Tuckahoe and White Plains, at 7 30 and 9 30 am., 3 and 4 15 pm.

Trains will leave Davis' Brook, Pleasantville, Chapequa, Mount Kisko, Bedford, Mechanicsville, Purdy's and Croton Falls, at 7 30 and 9 30 am., 3 pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave

Morrisiana and Harlem at 7 20,8, 8 50, 10 am., 12m., 1 35, 3, 3 45, 5, 5 35 pm.

Fordham and William's Bridge at 7, 8 30, 9 50 am., 1 15, 3 25, 5 20 pm.

Hunt's Bridge at 8 20, am., 3 18 pm.

Underhill's Road at 8 10 am., 3 08 pm.

Tuckahoe at 8 05, 9 30 am., 3 05, 5 pm.

Hart's Corners at 7 55 am., 2 52 pm.

White Plains at 7 45, 9 10 am., 2 45, 4 40 pm.

Davis' Brook at 9 am., 2 35, 4 30 pm.

Pleasantville at 8 49 am., 2 20, 4 19 pm.

Mount Kisko at 8 30 am., 2, 4 pm.

Bedford at 8 25 am., 1 55, 3 55 pm.

Mechanicsville at 8 15 am., 1 45, 3 45 pm.

Purdy's at 8 05 am., 1 35, 3 35 pm.

Croton Falls, at 8 am., 1 30, 3 30 pm.

The trains for Harlem and Morrisiana leaving City Hall at 7, 9, 9 30, 11, 12, 2, 4, and 5 30, and from Morrisiana and Harlem at 7 20, 8, 10, 12, 1 35, 3, 3 45, and 5 o'clock, will land and receive passengers at 27th st., 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and 132d streets.

The 7 30 am., and 3 pm. Trains from New York to Croton Falls, and the 8 am. Train from Croton Falls will not stop between White Plains and New York, except at Tuckahoe, Williams' Bridge and Fordham.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2 30 pm., Sundays excepted.

NOTICE—On Sundays the 7 am. to Harlem and Morrisiana, returning at 8 o'clock, and the 7 30 am. to Croton Falls, returning 1 30 pm., will be omitted, and the 7 am. from Williams Bridge will leave at 7 40

44*1y

ST. LAWRENCE & ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinthe, leaving each terminus alternately, until further notice.

Leaverng St. Hyacinth at	- -	7 am.
" "	- -	3 pm.
Leaving Montreal at	- -	10 am.
" "	- -	6 pm.

THOMAS STEERS, *Secretary.*

May 31, 1849.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare.

Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains run daily, except Sundays, as follows:

Leave Baltimore at - - -	9 am. and 3½ pm.
Arrive at - - - - -	9 am. and 6½ pm.
Leave York at - - - -	5 am. and 3 pm.
Arrive at - - - - -	12¾ pm. & 8 pm.
Leave York for Columbia at	- 1¼ pm. & 8 am.
Leave Columbia for York at	- 8 am. & 2 pm.

Fare:

Fare to York - - - - -	$1 50
" Wrightsville - - - -	2 00
" Columbia - - - -	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg - - - - - - -	$9
Or via Lancaster by railroad - - -	10
Through tickets to Harrisbnrg or Gettysburg -	3

In connection with the afternoon train at 3¼ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at - - 5¼ pm.

Returning, leaves Owing's Mills at - - 7 am.

D. C. H. BORDLEY, Sup't.

31 1y Ticket Office, 63 North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot - -	$0 18	$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc. - - -	0 40	0 65
	Cotton, per 100 lbs. -	0 45	0 70
	Molasses per hogshead -	8 50	13 50
	" " barrel - -	2 50	4 25
	Salt per bushel - -	0 18	
	Salt per Liverpool sack -	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows - -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton.

F. C. ARMS,

Sup't of Transportation.

LITTLE MIAMI RAILROAD.—WINTER ARRANGEMENT.

Change of Hours.

on and after Thursday, November 9th, 1848, until further notice, Passenger Trains will run as follows:

Leave Depot East Front street at 9½ o'clock, am., and 2½ o'clock, p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leave Springfield, at 2½ o'clock, and 9½ o'clock, am.

Passengers for New York, Boston, and intermediate points, should take the 9½ o'clock, am., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9½ o'clock, am., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2½ o'clock, pm. Train from Cincinnati.

The 2½, pm., Train from Cincinnati, and 2½, am., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Fare from Cincinnati to Xenia		- -	$1 90
Do	do	Springfield - -	2 50
Do	do	Sandusky City -	6 50
Do	do	Buffalo - -	10 00
Do	do	Columbus - -	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

☞ The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

BALTIMORE AND OHIO RAILROAD, MAIN STEM.

The Train carrying the Great Western Mail leaves Baltimore every morning at 7½, and Cumberland at 8 o'clock passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harper's Ferry—with the various railroad and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between these points $7, and 4 cents per mile for less distances.—Fare through to Wheeling $11, and time about 36 hours, to Pittsburgh $10, and time about 32 hours.—Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily, except Sundays, from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13 y1

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement.

April 1st, 1849.—Fare $3.

Leave Philadelphia 8½ am., and 10 pm.

Leave Baltimore 9 am, and 8 pm.

Sunday—Leave Philadelphia at 10 pm.

" " Baltimore at 8 pm.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, $20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, $12.

" " Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.

Leave Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm.

Fare $3.—Second class, $2.

N.B.—Extra baggage charged for.

I. R TRIMBLE, Gen. Supt.